

Impressions

FLEET
OPERATIONS
MANUAL



R U L E S O F E N G A G E M E N T 2

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RULES OF
ENGAGEMENT
2

programmed by
THOMAS R. CARBONE

interface, art direction & graphics
MAURICE MOLYNEAUX

music composed and conducted by
DONALD S. GRIFFIN

"federated worlds" theme composed by
DAVE GOVETT

technical advisor
MARK R. BRADSHAW

production assistant
JAMES SHELTON

CCSI vocals
ANDREA MORRISON

campaigns by
HOSEA BATTLES
HAYWOOD NICHOLS
JOSE LOPEZ

manual written by
CHRIS FOSTER
JAMES SHELTON
THOMAS R. CARBONE
MAURICE MOLYNEAUX

designed by
THOMAS R. CARBONE
MAURICE MOLYNEAUX

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Designer's Notes

1993 marks Omnitrend's tenth anniversary. With a new decade ahead, we are re-committing ourselves to producing innovative and exciting new games. To symbolize this continued commitment, we have changed our company logo. This new bold, modern look will bring Omnitrend through the next decade. We hope you will be there with us.

To kick off the new decade, we are pleased to present Rules of Engagement 2. This game represents a significant advance in computer game AI. We have done much research and experimentation to develop this technology. The results speak for themselves.

In Rules of Engagement 2, you will be dealing with other characters that have more detail and realism than any computer opponents to date. In addition, through the use of our now hallmark "builder" program, you can create and edit personalities of your own. We hope that during the course of your playing this game, you will take the time to experiment with these "personality traits". We think you will be amazed at how fun and interesting it can be to see how different personalities react in various scenarios.

Rules of Engagement 2 also features the world's first tree-structured campaign builder. All of the campaigns you will play in the game are tree-structured. This means that at the conclusion of each mission you play, the next mission will be selected based on a win or a loss. As such, the campaign story will progress differently dependent on your actions. Rules of Engagement 2 features the world's first tree-structured campaign builder. Using this tool, you can edit campaigns that come with the game, or create your own. We've even given you the ability to add your own graphics and animation to your campaign.

Rules of Engagement 2 continues the story started in our very first game, Universe. Further on in this manual you can read this background story and, if you played any of our previous games, engage in a bit of nostalgia. We plan to continue this story with many of our future games.

Lastly, I would like to thank all of our players who have contributed ideas and suggestions over the past ten years. It has been great fun hearing from you, and we hope that we have satisfied many of your wishes. We look forward to hearing from you through the next decade.



Thomas R. Carbone, President
Omnitrend Software, Inc.

Design Philosophy

Like most computer simulators, **Rules of Engagement 2** is a highly detailed and fairly complex program. An ordinary aircraft flight simulator can easily confuse the average gamer with its multitude of controls and options, and a real-time starship simulation could easily become even more complex because of the very nature of space and the laws of physics which apply. With fleets of starships traveling at greater than half the speed of light, combat zones with a diameter greater than 50 Earths, and an overall arena billions of kilometers on a side, a game like **Rules of Engagement 2** could become hopelessly unwieldy.

However, although we attempted to be as realistic as possible wherever we could, our primary goal was to make an interesting and entertaining game. Real starship commanders, when and if they actually appear on the scene, will no doubt have to be highly trained: understanding Doppler shifts and time-dilation at speeds approaching that of light, and have a keen knowledge of Newtonian mechanics. Obviously, this is a bit much to ask of the average gamer. After all, who wants to calculate acceleration rates for orbital injection around a planet or compensate for time slowing down as our ships approached lightspeed?

Thus, certain "liberties" were taken with the game. There's no time dilation as ships approach lightspeed, and your ships' sensors use a "HyperScanner" field system in order to give you real-time updates on the positions of targets in your vicinity. All this was done to keep the game playable.

In keeping with this simplification, it's logical to expect that, as computers become more and more advanced, on such hypothetical starships a commander would only have to tell the computer what he wanted and it would do it. After all, at velocities approaching 300,000 kilometers per second (lightspeed), human reflexes are thousands of times too slow to react to changes and threats. In reflection of this, in **Rules of Engagement 2** the player operates all aspects of the mission via a simple yet powerful computer interface. You have a great deal of control, but all the niggling details — like taking care that the antiproton to deuterium ratio in the engines is correct, and that the ship stays at the right distance relative to a target while you're busy firing the weapons — are handled automatically.

Even with this simplification, there's a lot to learn and understand. We've tried to make many of the ship's functions fairly automatic, allowing you to adjust various devices and settings when you become more familiar with them. Our design goal was to produce a full-featured, realistic, entertaining *and* easy to play game. We think we've succeeded.

We hope you agree.

About The Manuals

In Omnitrend's "Universe" a potential Fleet Commander must first complete four or more years at a military academy and then spend more years rising through the ranks. The training received during this period is intensive, covering everything from diplomacy, discipline, and tactics to technology and astrophysics.

The size of the **Rules of Engagement 2** manuals should make it clear that we're *not* about to try to give you this background training. While realistic in many ways, **Rules of Engagement 2** is nowhere near as complex to play as a real starship would be to command and control.

This is not to say that you could just dive into the program and play the game successfully without first reading at least portions of the instructions. However, we also understand that most of you will not want to have to read all of the relevant sections of the manual prior to playing the game the first time. So, to give you a general idea of how **Rules of Engagement 2** is played, **Part I** of the **Training** Manual takes you through a very simple beginner campaign with step-by-step instructions. In this way you'll get to play **Rules of Engagement 2** right away and also get some familiarity with the program that will assist you in understanding the rest of the documentation. **Part II** of the **Training** Manual describes tactics, techniques and strategies that may be useful in successfully completing your campaigns.

For those of you familiar with our games, **Part I** of the **Fleet Operations** Manual updates "The Story So Far", which fills you in on the background of the game, lists your overall operational orders and also contains intelligence reports on enemies, etc.

Part II of the **Fleet Operations** Manual describes your goals, objectives and resources, what campaigns are and how they are played. **Part III** documents the **Rules of Engagement 2** interface system (CCSI2), describing the design features and general theory of operation. **Part IV** describes the steps necessary to deploy your own Fleet Commander into a campaign. **Part V** continues in this vein, describing the controls and panels in the game itself, documenting each and every button, readout and display.

The **Appendixes** document technical details, describe the supplied campaigns, details the operation of the Interlocking Game System (IGS), etc.

Finally, one of the most important features of **Rules of Engagement 2** is that it allows you to design and build campaigns yourself. The **Builder** Manual documents the "builder" sections of the game and how the various editors are used to create new campaigns or edit existing ones.

PART I: THE STORY SO FAR...

Approximately 23,000 lightyears from the core of the barred spiral galaxy known as the Milky Way, in one of the spiral arms, exists a class G2 main sequence star designated "Sol". One of the nine planets orbiting this rather unremarkable star is a habitable (to oxygen processing carbon based lifeforms) globe named Earth. To date, Earth has produced only one sapient, spacefaring race, called *humans*.

Humans were restricted to the confines of the Earth for the first four million years of their existence. All of that changed in the middle of the 20th century, when the race took its first tentative steps into the void of space.

Our story begins in earnest with *The First Stellar Expansion*, which began on May 10, 2029 CE¹ with the first practical demonstration of the hyperdrive field effect. The test was carried out in Building 4 of Area 117 of the Franklin Labs Research Range at Hawthorne, Nevada, in what was then the United States of America (the region is now part of the Federal Republic of the Americas). Five years later, that country's National Aeronautics and Space Administration deployed the unmanned vehicles *Odysseus I* & *II* to test the practicality of hyperdrive as a method of interplanetary and interstellar travel. *Odysseus I* successfully engaged hyperdrive, but its field effect was greater than anticipated, and resulted in the destruction of both the probe and the Space Tug which had launched it. *Odysseus II* was launched two months later, and its hyperdrive activated only when it had left the vicinity of Earth and Luna. *Odysseus II* returned to Earth orbit three weeks later, having successfully "hyperjumped" to the Oort Cloud at the perimeter of the Sol system, taken readings and photos, and then returned.

In 2040, only 11 years after the hyperdrive field was first tested and seven years after the *Odysseus* probes, the first practical starship, the USSC *Gerardus Mercator*, with its crew of seven, made a successful jump of over two lightyears through hyperspace. Less than 100 years after that first manned jump, the colonies of Earth consisted of 8 planets and over 18 billion inhabitants, scattered across several solar systems in the "neighborhood" of Sol/Earth, and were known as the Home Cluster.

Hyperspace proved to be rather curious. It was totally devoid of energy or matter, yet spacecraft could operate normally within its bounds. A trip through it (a hyperjump) would take, regardless of the actual distance in "normal" space, 6.8433 Earth days. There were, however, two limitations to its use. One was the enormous amount of energy required to enter hyperspace. The other was the so-called "Mass Limit", which, stated simply, placed a severe limit on the size of spacecraft that could enter hyperspace.

By the late 2000's starships, powered by mass-conversion, were strained severely just to travel from one end of the Home Cluster to the opposite end, and three ships were lost when the strain overloaded their systems. The energy/fuel requirements for jumps beyond the Home Cluster demanded starships larger than the Mass Limit permitted. Because of this fact, and that all of the Home Cluster colonies remained dependent on Earth for support, the experts were predicting an end to the Expansion.

As usual, the experts were wrong.

¹ CE = Common Era. Based on the Gregorian calendar, the Common Era dating system includes the Year 0. Thus, 2029 CE is 2028 AD.

In 2095, a team of scientists, traveling through the far reaches of the Tau Ceti solar system, were shocked when they discovered a huge alien artifact drifting through space. Entire scientific communities came to study the artifact and, several years later, the purpose of the great object was discovered. It was a hyperspace booster, a device with the capability to "push" spacecraft (and other objects) not tens but *thousands* of lightyears through hyperspace. Since the booster itself did not enter hyperspace (it was calculated to exceed the Mass Limit by a factor of thousands), a ship right up to the Mass Limit could travel enormous distances using virtually no power.

Years of research continued. Why had the Charon—the "gatekeepers" as the scientists dubbed them—abandoned a working booster? Where had they gone? The scientists were unable to say.

Eventually, elements of the Charon's control system were deciphered and trial boosts began. They proved the booster to be fully functional and the technicians' knowledge of the control system was deemed adequate to allow regular use. The *Second Stellar Expansion* was underway.

The booster contained a mapping system of millions of stars, only a few of which seemed to have any special designation. In 2100 researchers christened the most notable of these stars "Hope". Their studies of the mapping system led them to believe that Hope and its surrounding systems were populated, perhaps by the builders of the booster. This encouraged potential explorers, who sought to use the booster to travel to the Hope starsystem and meet the constructors of the Hyperspace Booster. These first explorers boarded their spacecraft and were hurled to the Local Group via the Booster in late 2109. When the explorers failed to return to Earth (along with some aliens), the booster researchers went back to their databanks, and the next conclusion they reached was that the symbols associated with Hope and the stars around it meant that the area (which by this time had been dubbed the Local Group) was unusually well-populated with habitable planets. Fortunately for our forefathers, the assumption was correct.

By 2208, the last uncolonized habitable planet within the original LG boundaries was formally settled (Arbest). Colonists continued to arrive en masse from the Home Cluster until 2299, when colonization efforts were shifted to the more recently discovered Dark Cluster. Smaller groups of colonists continued to arrive until the end of 2322.

From the very beginning, the Local Group had received Development Assistance packages from the Home Cluster to assist them in constructing new colonies and providing updates to their technology. In 2323 the shipments stopped coming. Officially, the word was there hadn't been any indication that they would stop. The ten years that followed were known as The Great Panic, a period of interstellar war and piracy that nearly destroyed human civilization in the Local Group. Fortunately, at the peak of hostilities, a hyperspace booster was discovered inside the Local Group. The knowledge that two-way communication with the Home Cluster might be established acted to calm the Local Group. A monumental plan was put into action to move the booster, entirely at sublight speeds, into orbit around Cetus Amicus. But, during the decades the move required, the Local Group again fell into turmoil, this time to emerge divided into two mutually hostile governments: the Federated Worlds (FW) and the United Democratic Planets (UDP).

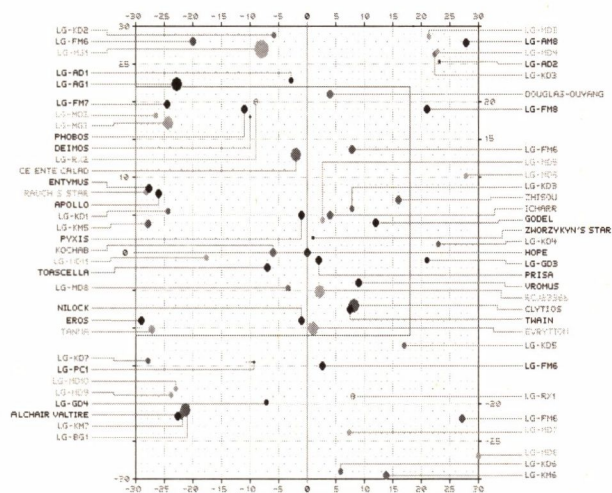
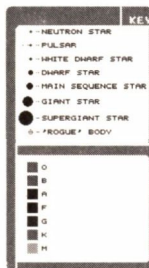
Following years of instability and chaos, the FW and UDP ceased hostilities and formed an overarching governmental agency known as the Local Group Unification Organization, which was to oversee the slow reunification of the two nations.

Several years after the reunification process began, the hyperspace booster at Cetus Amicus was certified as operational. The Federated Worlds, eager to reestablish contact with the Home Cluster, dispatched the FWS Union, under the command of Captain Alex G. Seward, to use the booster and travel to Tau Ceti III — the location of the Home Cluster`s hyperspace booster. Captain Seward completed his mission, overcoming a saboteur and xenophobic locals, and uncovered the truth about the discontinuance of Development Assistance packages to the Local Group.

Seward`s report of his findings, sent back to the Local Group with via the Tau Ceti booster, led to an investigation by the Federated Worlds Special Forces` Intelligence Division (FWSF- ID). It was discovered that a conspiracy had been going on for those fifty years of non-contact, involving high-level officials in not only the Home Cluster, but also in both the FW and UDP, many of whom were currently serving on the Local Group Unification Organization`s high council. Some of the investigation`s findings were leaked, and this caused the Unification Organization to collapse. With both UDP and FW governments implicated in the conspiracy, both sides grew mistrustful and hostile. Following several military incidents, on 24 Apr 2374 CE the UDP declared war on the Federated Worlds.

After two years of conflict in which neither side could gain the upper hand, the UDP assumed a less outwardly aggressive posture, targeting their strikes at key weaknesses in the FWAf.

During the period just prior to and during the FW / U D P War, a number of sapient species were encountered by both governments. A few were peaceful, other



LOCAL GROUP STARCHART

2376 CE

This is the situation which exists today.

• *Your Primary Objectives*

Having gotten your first sample of **Rules of Engagement 2** through the tutorial, you now have some idea of what the game is about and how it is played. This section provides brief descriptions about key aspects of the game, allowing you to form a better mental picture of the nature of your objectives in the game, the opposition you face, and what resources are available to you and your opponents.

• *You as the Fleet Commander*

Rules of Engagement 2 is a strategic role-playing game in which you take on the role of a Fleet Commander deployed to lead Federated Worlds forces in specific missions against enemy or rebel forces. Your overall objective is to advance your Fleet Commander. This is accomplished by successfully completing campaigns, which raises the total score for the Commander. When certain scores are reached, the Commander is promoted.

NOTE: For detailed information about Fleet Commanders, see APPENDIX I: THE FLEET COMMANDER.

• *Campaigns*

A campaign is nothing more than a series of related or linked missions you must lead. A given campaign can contain as few as one mission, or, potentially, thousands.

Each campaign contains a preset number of resources consisting of FW captains, FW ships, and enemy ships that can be used in the campaign. It is possible to lose most or all of your available ships and captains before the end of the campaign. In fact, if you're very unlucky, you might have plenty of ships, but no captains to command them, or vice-versa.

However, since campaigns can be "chained" so that one campaign leads to another, it is possible that at some point during a campaign you might find yourself with a new roster of ships and captains to work from, and an entire new roster of enemy ships.

Captains

You have direct control of only the mission's flagship. All other ships under your command have their own Captains, whom you must manage and deploy. Using your ship's communications system, you can send orders to these Captains, instructing them to undertake various actions.

One thing that is very important to understand is that each Captain has a distinct personality which will affect how he or she acts and responds to your orders. Some will attempt to meet mission objectives without awaiting orders from you, others won't budge without a direct order. Some will follow your orders to the letter, others won't listen to you at all. Some are clever tacticians, others have the IQ of a black hole. Some are so loyal that they will blow themselves to bits on your order, while others just don't give a hoot about you, your orders, or the Federated Worlds, and will surrender to hostile forces at the drop of a hat.

Additional personality traits, such as their religious and political beliefs and the strength of their convictions can affect how successful they are at negotiating for docking rights with neutral outposts.

As a result, one of the most important aspects of a mission is to decide which Captain is right for what job and which ship he/she/it should command (if any). Captain docketts can be reviewed from the Fleet Deployment screen, and can also be accessed during a mission via your flagship's Data Retrieval system (DATDKT panel).

Federated Worlds Ships (FWS)

All of the vessels under your command are ships of the Federated Worlds. There are six classes of ships, each with its particular strengths and weaknesses. The starship classes are: Transport, Scout, Destroyer, Cruiser, Heavy Cruiser, and Dreadnought. In optimal configuration, Dreadnoughts are the most powerful ships in the fleet, and Transports the weakest. However, since some large warships are equipped with less than the best parts, sometimes a Dreadnought can end up being less capable than a Cruiser.

For detailed information on Federated Worlds ships, see APPENDIX III: THE FW FLEET.

Enemy Ships

Enemy forces have access to ships comparable to those in your forces' inventory. They conform to the same six categories: Transport, Scout, Destroyer, Cruiser, Heavy Cruiser, and Dreadnought.

Campaign Briefing

Each campaign begins with a briefing that explains your overall campaign objectives and may provide additional information or goals. The campaign objective can also be accessed via your ship's DATA RETRIEVAL system (DATOBJ panel).

Missions

A mission is a single, specific military operation. In it, you take command of one of the Federated Worlds starships deployed for the mission. The force under your command can consist of a few as one ship, and up to entire armadas of tens of vessels, but whichever vessel you choose to command, regardless of its size or seeming importance, becomes the flagship.

Mission Locales

Each mission takes place within a confined space. The mission map is a 4 x 4 billion kilometer plane, with an overall map area of 16 quintillion square kilometers. All game action takes place on a two-dimensional plane through the center of the map. Maps can represent the void of interstellar space, or contain some or all of the makings of a solar system.

You cannot collide with map objects, as they are treated as if just *below* the plane your ships, and the enemy, are on. Thus, when your ship appears to be flying *through* the sun or a planet, it is actually passing over it.

You cannot leave the map. Your ship's navigational subsystem has an inhibitor which will prevent your vessel from leaving the boundaries of the map.

Map Items**Stars**

The size and class of the star(s) in the system can effect your communications systems. The hotter the star, the more interference it creates. Furthermore, the closer you are to the star, the higher the interference. Starsystems with black holes will make communication almost impossible.

Stars come in eight basic types and various classes. Two stars of the same radius, but of different spectral classes will produce very different interference levels.

Star types:

Supergiants	extremely large stars
Giants	large stars
Main Sequence	medium-sized stars
Dwarfs	small, cool stars
White Dwarfs	collapsed main sequence stars
Neutron Stars	collapsed giant stars
Pulsars	rapidly rotating neutron stars
Black Holes	collapsed stars from which no energy can escape

Spectral classes:

B (blue)	extremely hot
A (white)	hot
F (yellowish)	moderate-hot
G (yellow)	moderate
K (orange)	moderate cool
M (red)	cool

Planets

Planets have absolutely no effect on your ships or those of your enemies. They are significant only in that they may harbor outposts and cargo. Outposts located on planets take longer to deliver supplies and repairs from than those "free-floating" in space.

Fields

There are two basic types of fields: asteroid and radiation.

Asteroid fields are no menace to navigation, however, the more dense an asteroid field is, the more difficult it is to scan outside it. A ship caught in a dense asteroid field is at a disadvantage because it may be effectively sensor-blind while opposing ships outside of the field are probably still be able to see it. Dense asteroid fields can be useful, for ships can "trawl" such fields for raw material to use in their repair systems' parts fabricators.

Radiation fields, on the other hand, can hinder your mission, as they can affect your ship or crew. They are usually associated with stars and large planets, and, occasionally, with outposts. There are three types of radiation fields:

Gamma	Injurious to life forms. Time spent in such a field will injure crew and eventually kill them. Such a field at a strength near or at 99 will be near instantaneously fatal.
Enbranson	Affects sensors, often yielding inaccurate information. Non-injurious to life.
Donnigran	Affects shield efficiency depending on strength of field. Does not affect sensors, but can be injurious to life (although to a much lesser extent than GAMMA radiation).

Waypoints

Are simply locations in space established by a set coordinate value. FW ships may be deployed from some Waypoints, and cargo may also be found at some.

Outposts

Outposts are bases. They can be planet-bound facilities or free-floating space stations. Each has two levels of sophistication of interest to starship commanders, related to the Outpost's ability to repair starships and resupply their missile stocks. The higher the sophistication, the more help the Outpost can provide.

There are four types of outposts, ranging from unarmed and poorly defended to heavily armed and defended.

Outposts can have one of three alliances: to you, the enemy, or remain neutral. Friendly (FW) Outposts will come to your aid if you dock with them, enemy Outposts will aid enemy ships, and neutral Outposts may or may not help either side, depending on the diplomatic skill of the ship commander wishing to dock and the disposition of the group controlling such outposts (see Neutrals later in this section).

If an Outpost is hostile, the only option you have related to it is capture. If a neutral Outpost denies you docking permission, you may also attempt to capture it. Capturing an Outpost involves a procedure similar to that used in capturing an enemy ship, except that only the Outpost's shield and weapon systems must be disabled before boardings. Naturally, enemy forces can attempt to capture neutral or Federated Worlds Outposts as well, and will probably attempt to retake their own facilities that you have occupied.

Capturing a particular enemy Outpost may actually be set as an objective for a particular mission.

As with boarding an enemy ship, if you have **Breach 2** or **Breach 3**, the Interlocking Game System allows **Rules 2** to lock into that game and utilize it for such Outpost boarding sequences (see APPENDIX VII: INTERLOCKING GAME SYSTEM).

Time-Limits & Real-Time Missions

Although campaigns have no time limits, some missions have them built in, forcing you to complete the mission objectives within a certain time-frame. If you do not meet all of the objectives within a particular mission's time limit, you will have failed to successfully complete the mission, and the campaign will continue registering a "loss" for your fleet commander.

The CHRONO readout on the Master Control Bar of your ship's CCSI2 interface displays a continually updated mission clock, registering how many hours, minutes and seconds have passed since the mission began. The total mission time remaining can be seen on the objectives display on the DATOBJ panel.

Everything that happens in **Rules of Engagement 2** occurs in real-time. One second of time in the "real" world equals one second of game-time, which means, if you don't pay attention, you could suddenly find yourself having less than five minutes in which to get your ships to a point in space that would take ten minutes to reach at maximum velocity, and thus lose the game.

E=MC²... It's the Law

According to Einstein's Special Theory of Relativity, no object can accelerate beyond the speed of light — roughly 300,000 kilometers per second. For interstellart travel, this is circumvented by use of "hyperspace" engines, which allow ships to pop out of normal space in one location and, 6.8 days later, emerge at a location many lightyears away. However, hyperspace travel is impractical within a solar system (who wants to take 6.8 days to cross a distance you could travel in hours?), and thus all ships are trapped by the "lightspeed barrier." Thus, "hyperspacing" is used only for abandoning the current mission.

At maximum, the fastest ships in the game can reach 99% of lightspeed. All missiles travel at 99.9999% lightspeed. Enhanced Beam Weapons and communications signals, being energy, can travel at lightspeed, but no faster.

300,000 kilometers per second is fast, but it's not infinitely fast, something you'll pick up on soon enough when you realize that it can take 3.7 *hours* for a message at that velocity to cross a 4 billion kilometer axis of the solar system map! Simply put, you can't flash all over the map instantaneously, nor yell for help and expect the cavalry to come running right away.

Communications

The Communications system is one of the nine primary systems of your ship. Through it you deploy your forces and keep tabs on them. This system keeps track of messages received, and contains a list of orders which you can send to the Captains under your command. You can direct Captains to particular targets or patrols, or even contact the enemy and order them to surrender.

Battle Groups

Deploying Captains individually can be time-consuming, particularly when you want several of them to do the same thing – like defend an Outpost or attack a specific ship. This problem is alleviated by the formation of Battle Groups, in which two or more ships undertake actions as a unit. Battle Groups are formed by ordering one Captain to form a group, and then instructing other ships to join the group. Once the Group is formed, all of the ships in the group will act on whatever the Group Captain does, with the net result being that you can control many ships by sending orders to only one.

Naturally, this is not a perfect system, as, again, the personalities of given Captains come into play. Some Captains rebel against authority, and still others won't take orders from Captains who have less experience than they do. As a result, forming Battle Groups often requires even more attention to the personalities of the Captains than normal.

Enemies

In each mission you will find yourself facing a specific enemy force composed of a particular faction or race. Like a Captain under your command, these enemies have "group traits" which affect their actions and reactions. A particular enemy might be very aggressive, and would be more likely to attack your forces or Outposts than less aggressive creatures. They might be exceptionally clever tacticians, but also possess poor diplomatic skills, thus making it unlikely they could convince neutral Outposts to help them.

As with your Captains, a docket of information about your opponents is available from your DATA RETRIEVAL system's DATDKT panel.

Neutrals

In any mission you may find “neutral” outposts, which are controlled by neither your forces nor the enemy. Such outposts will be controlled by a specific “neutral” force composed of a particular faction or race. Like the enemies you engage, these neutrals have “group traits” which affect their actions and reactions. A particular neutral race might be very aggressive, and would be more likely to fire upon your ships that allow you to dock than would less violent creatures. Furthermore, although they are listed as “neutral” that doesn’t mean they might not have more in common with your enemies and would tend to grant them docking rights while telling you to eat proton dust.

As with your Captains and enemies, a docket of information about the neutrals is available from your DATA RETRIEVAL system (DATDKT panel).

Navigation

Another of your ship’s nine key systems. Most navigation is a fully automatic process, although manual control is possible. Through your ship’s navigational system you can keep track of objects and ships in the system, and with the touch of a button probe, intercept, or chase any one of them.

Combat

This (usually) involves two or more opposed ship moving within 500,000 kilometers of each other and firing on each. All ships are armed with a form of EBW (Enhanced Beam Weapon), and some may also carry varying numbers and types of missiles.

Ships are protected by defensive energy shields, which minimize damage from hostile fire. However, the shield system can itself be damaged and destroyed, and even the best shields are not 100% effective at preventing damage. Failure to raise the shields in combat is a sure way to invite destruction.

Ships are considered destroyed when one of the following conditions is met:

- All the crew on-board the ship are dead
- The damage level of the Hull system reaches zero
- The damage level of both Primary and Emergency Power systems reach zero

Damage

Every ship has nine primary systems, each of which has can sustain damage. Undamaged systems work with 100% effectiveness. As a system is damaged, the functions related to that system begin to fail, until eventually the related functions become inoperable. A system that is at 0% operation capacity is considered destroyed and cannot be repaired, except at an outpost.

Damage is sustained in combat with hostile forces, the one exception being when communications equipment sustains damage when you push the system to its limits.

If a system is at least partially operational, it can be repaired. However, the more damaged a system is, the longer it takes for your ship's damage control teams to deal with the problems. Using the repair settings on your ship's DOCK AND REPAIR panels (DRPREP), you can distribute your repair personnel to priority systems. Furthermore, docking with an Outpost may be helpful, as many Outposts are capable of fixing your systems more quickly and completely than your own crew.

Boarding

Some missions may require you to capture an enemy vessel. To capture a vessel you must board it and seize control of a certain percentage of critical systems. To board an enemy ship you must first destroy its shield and drive systems, and then move your ship within 5,000 kilometers range.

Some missions may also require you to capture an outpost. To board an outpost you must first destroy its shield, and then move your ship within 1,000 kilometers range.

Boarding is normally a fully automatic process, however, if you have **Breach 2** or **Breach 3**, the Interlocking Game System allows **Rules of Engagement 2** to lock into that game and utilize it for such ship boarding sequences (see APPENDIX VII: INTERLOCKING GAME SYSTEM).

Mission Briefing

Each mission contains a briefing that you can review at any time by accessing your ship's DATA RETRIEVAL system (DATDKT panel). The briefing will detail the background of the mission, and may also contain hints on how to deal with the enemies and avoid potential pitfalls.

Mission Objectives

One or more objectives will have to be met in order to complete a given mission. The objectives for a given mission are available for review at any time on your ship's DATA RETRIEVAL system (DATOBJ panel). Those objectives that are checked off have been met. A complete list of possible objectives follows:

All FW ships to Waypoint *x*— All surviving FW ships must reach the specified Waypoint (*x* = Waypoint ID). If more than one objective is required, this is always the last one that must be met, as it represents the final destination of all your forces.

One FW ship to Each Waypoint— Your Fleet must "control" strategic points in space. One FW ship must be located at each Waypoint on the map in order for the mission to end. Again, this must be the last objective met as it represents the final destination of all your forces.

NOTE: Either one of the two preceding Waypoint-related objectives may be in a given mission, but *only one*. You can't very well have one ship at each Waypoint and also get all ships to the first Waypoint, can you?

Secure Outpost x — For the mission to end your forces must be in control of the specified Outpost (x = Outpost ID).

Destroy Outpost x — Your forces must successfully destroy the specified Outpost (x = Outpost ID).

One FW Ship to Waypoint x — At least one of your ships must "control" a specific strategic point in space. One FW ship must be located at the specified Waypoint on the map in order for the mission to end.

Capture n Enemy Vessels— Board and capture the number of enemy vessels indicated by n .

Neutralize n Enemy Vessels— Your forces must successfully destroy and/or capture the specified number of enemy vessels indicated by n .

Control $n\%$ of Outposts— At the end of the mission your forces must simultaneously control the specified percentage (n = percentage) of Outposts.

Capture n Units of Enemy Cargo— Your forces must successfully capture the specified amount of enemy cargo units indicated by n .

Get n Units of FW Cargo to x — Your forces must successfully deliver the specified number of cargo units (n) to the indicated location (x = location ID). The location can either be a waypoint, planet, or outpost.

It sometimes gets tricky trying to figure out in which order to carry out these objectives, but the simplest way to approach it is to deal with those that cannot be changed by enemy actions first (like destroying ships) and then deal with "final position" objectives last (like moving ships to particular Waypoints).

As stated earlier, some missions also have a time limit. If a time limit is set, when the limit is exceeded you cannot successfully complete the mission. Therefore, it is important to fulfill the mission objectives before this limit is reached. A time limit objective will remain checked in the DATOBJ panel as long as you are within the allotted time frame.

Skill Levels

There are three skill levels you can play, Recruit, Normal, and Veteran. The differences are as follows:

Recruit

- Missiles and EBW`s from FW ships never miss (when fired within correct range).
- Enemy missiles and EBW`s do only 50% normal damage.
- FW ships have unlimited visibility of enemy ships.
- When pausing game, screen does not blank.
- Shields raise automatically when hit.

Normal

- Missiles and EBW's from FW ships are subject to the normal weapons' accuracy.
- Enemy missiles and EBW's do only 75% normal damage.
- Enemy ships are only detectable when within sensor range of an FW ship.
- When pausing game, the screen blacks out.
- Shields must be raised manually.

Veteran

- Same as Intermediate, except:
- Enemy missiles and EBW's do normal damage.

If you successfully played the same mission at both Recruit and Veteran levels, and took identical action with identical results in both games, you would notice that you received a lower performance rating for the Recruit game. This is done to penalize players for the many advantages gained in playing the Recruit level, which is easier than a Normal game and much easier than playing a game at Veteran level.

Skill levels have no effect on campaigns that have a difficulty rating of "very hard". These campaigns will always play at the veteran skill level.

Saving a Campaign/Mission in Progress

You have the ability to save your position at any time. This means that you can stop playing at any point and resume the game later.

- Saving from within a mission is accomplished via use of the disk icon (F7) on the Master Control Bar.
- Saving from the Fleet Deployment screen is accomplished via use of the DELAY (D) button.

In fact, when using the IGS system you can save your position within **Breach 2** or **Breach 3**, and when you tell **Rules of Engagement 2** to resume the game it automatically returns you to your position within **Breach 2** or **3**! (See APPENDIX VII: THE INTERLOCKING GAME SYSTEM for more details on the IGS system.)

Ending a Game

Each individual mission within a campaign (game) will end when:

- you choose "end mission" via the disk icon once all of the mission objectives are met (win)
- your flagship is destroyed (lose)
- your Fleet Commander is killed in a boarding action (lose)
- your flagship surrenders to enemy forces (lose)
- you abandon the flagship (win or lose)
- you hyperjump out of the system (win or lose)

If the Fleet Commander is killed during a mission, the campaign will revert to the last saved position, and you will be allowed to continue from that point.

A game will end when:

- You have reached the end of the current campaign (win or lose)
- your flagship is destroyed (lose)
- your Fleet Commander is killed in a boarding action (lose)
- the enemy fleet runs out of ships (win)
- the FW fleet runs out of ships or captains (lose)
- you delete the game

If you win a game, your Fleet Commander's statistics will be updated. If you lose the game, the game file is erased and the Fleet Commander stats will be updated to reflect the loss. If you delete the game prior to a win or loss, the Fleet Commander's stats will be unchanged.

Playing With Other IGS Products

The Interlocking Game System is a unique method of allowing separate games to combine with one another to form one huge game. **Rules of Engagement 2** is able to load Omnitrend's other IGS games, **Breach 2** and **Breach 3**, as if they all were one large game. It is possible that in future **Rules of Engagement 2** may be able to load or be loaded by other IGS modules, meaning that your role-playing character (the Fleet Commander in the case of **Rules of Engagement 2**) can adventure through many games.

Currently, **Rules of Engagement 2** is an IGS controlling module, which loads non-controlling modules (like **Breach 2**). Check with your dealer for information on other IGS games.

NOTE: A detailed description of the IGS system can be found in APPENDIX VII: THE INTERLOCKING GAME SYSTEM.

Creating Your Own Campaigns

You can create new campaigns or modify (some) existing ones by using the various 'builder' panels accessible from the **Rules of Engagement 2** CETUS AMICUS O-TOWER directory screen. See the Builder Manual for information on the use of the builder panels.

PART III: THE CCSI2 INTERFACE

Command and Control — Overview

Historically, war has often been the impetus for rapid developments in technology. This fact was demonstrated in the recent period of war between the FW and UDP. Just prior to the war, Intelligence Corp. `s new Command and Control Systems Interface (CCSI) became the standard control system throughout the FWAF. Less than a year into the war, Intelligence set about completely redesigning the system, the changes based upon reports of CCSI use in actual combat.

The original CCSI was built around a fully integrated system in which the data displays and controls were one and the same. Furthermore, it specified that the overall number of controls be reduced. Intelligence `s design did this by clustering related controls into easy to use master-mode panels. However, many FWAF crews reported that the rigidity of the mode-specific system was a hindrance, because checking on an unrelated function often meant switching to an entirely different control/display. This made it difficult to do things as simple as consult the received communications display while maintaining fire on a hostile.

Intelligence ` answer: CCSI2.

CCSI2 works much like CCSI, but the key difference is that the mode-specific nature of CCSI has been abandoned. CCSI2 breaks functions down into small clusters of closely related controls and readouts and arranges them into small "quadpanels" each representing only 25% of a CCSI2 panel `s area. Four quadpanels of any type can now be mixed and matched at will, allowing operators to simultaneously keep multiple functions and displays before their eyes.

Additionally, CCSI2 was eye-gonomically designed to diminish the sharp color contrast of the original system, which many operators complained was uncomfortable to look at for long periods of time.

Interface types

Although the FWAF is striving to provide all of its personnel with the latest in computer technology, the pressures of the war have caused materiel shortages. As such, the latest CCSI2 interfaces have been prioritized for combat starship use, while other facilities must make do with older technology. As such, while you `ll find the latest and greatest interface on your flagship, when visiting other locales, such as the Cetus Amicus Orbital Tower, you `ll find less sophisticated systems.

In most cases, all control systems conform to the general CCSI standards, with action and selection buttons (see below) clearly differentiated.

Hardware buttons

In some facilities CCSI multi-mode control/display systems are not in use. In such places, actual hardware switches and controls appear. The important thing to remember is that such switches are almost always self-evident, because they will be labeled with their function, and one symbol of the label will be colored either magenta or blue [this colored letter also represents the keyboard equivalent]: magenta for action buttons and blue for selection buttons.

Where controls deviate from these norms, the differences are noted in the documentation for that function or system.

Interface Basics

First-time users of CCSI systems are often overwhelmed by the seemingly complexity of the system. Appearances can be deceiving, and this is clearly the case with CCSI2. It *looks* complicated, but in reality operation is actually fairly simple and straightforward. There are only a few operating rules to learn.

CCSI2 interfaces are a single glassy panel, on which is displayed a simulated representation of a control board. This is a touch-screen which is operated by pressing on the display's simulated "buttons" and touching or "dragging" other controls. Since the controls are part of the display rather than separate equipment, the system can mix information displays with the controls themselves.

On starship CCSI2 panels, a mechanical Master Control Bar appears over the screen. This bar — which normally appears at screen center but moves off to one side for large panel displays — controls and coordinates the configuration of the CCSI2 (and is described in PART V: THE GAME PANELS).

Using CCSI2

FWAF computer systems work with multifunction touch-sensitive displays. Chances are your actual personal computer isn't this sophisticated, so you must operate the interface using a mouse and/or keyboard. Control of the CCSI2 panels is covered in this section, with operational details for both mouse and keyboard users. "Pressing" a button in the lingo of these instructions means to click on it with the mouse or press the keyboard equivalent.

KEYBOARD NOTE: Remember, key equivalents are listed on most buttons as the overscored letter or symbol. In some cases the button symbols themselves represent keys. The following is a list of button symbols and their keyboard equivalents:

<i>symbol</i>	<i>keyboard equivalent</i>
0 to 9	number keys (on the <i>main</i> keyboard)
F1 to F10	function keys
+	+ [plus] key
-	- [minus] key
←	left-arrow key (cursor pad)
→	right-arrow key (cursor pad)
↑	up-arrow key (cursor pad)
↓	down-arrow key (cursor pad)
←	Home key
→	End key
↶	PageUp key
↷	PageUp key

MASTER CONTROL BARS & BANKS

This as a bank of controls and readouts which coordinate all "global" actions in the current section. For example, the master control bar in the game itself is used to configure and coordinate all other displays. Likewise, in all of the builders there is a master control bank of controls concerned with loading, saving, and editing.

QUADPANELS, "FULL" PANELS, & PANEL IDs

A "quadpanel" in CCSI2 terms is a small group of related controls, such as those associated with Fire Control, Defensive Systems, or Helm Control.

A "full" panel is an expanded, full-screen version of a quadpanel with more options. In some cases, such a full panel will combine functions of two or more quadpanels. In the case of all fullpanels they can be reduced to quadpanels by a self-contained **QUAD** button.

Each and every quadpanel has an identifying label. These are always six-letter names. The first three letters identify the category of the panel type. For instance, all shipboard CCSI2 panels related to navigation function begin with the letters "NAV." The three concluding letters are used to identify the specific function of the quadpanel under that category, i.e.- "HLM" for helm (course and velocity) controls, and "MAP" for the map display.

Panel series are as follows:

NAV	Navigation
COM	Communications
TAC	Tactical (weapons and defense)
DAT	Data and information
EMR	Emergency systems
DRP	Dock and repair

Sample quadpanel

Each CCSI2 quadpanel is made up of several distinct "parts", some or all of which may change as you access different systems. For reference, we present here a "sample" of a quadpanel with "typical" elements.

ACTION BUTTONS

Action buttons are controls which do something. Activating one has an immediate result, such as changing a mode or firing a

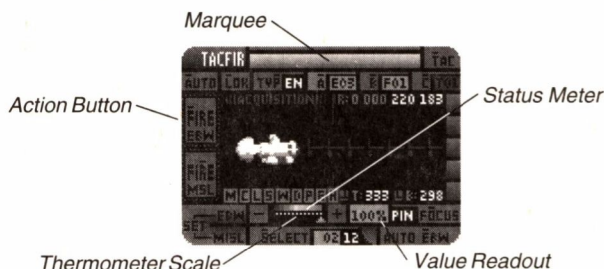
missile. They represent "buttons" of the type you "press/touch". Using an action button as simple as clicking on it with the mouse or pressing the equivalent key on your computer keyboard.

Action buttons are easily identified because they are *always* a flat brown-gold in color (magenta on older CCSI systems). The flat color indicates that these are controls rather than a display or readout. Being flatly colored, they are easily discernible from the gradated color used on many other CCSI2 elements.

There are two types of action buttons. The first is the "trigger" type, which activates a particular function and then deactivates it. Trigger buttons will "flash" a few times when pressed and then return to their normal color. The second type of action button is the "switch" type, which, when pressed, remains active until another function deactivates it or it is selected again to toggle it "off". When such a switch is "on" it remains highlighted to indicate its status.

A FIRE button is a "trigger" type, firing a weapon and then stopping. On the other hand, "switches" include a LOK button that locks the weapons system onto a target, or an AUTO EBW that calls causes the system to repeatedly auto-fire on the current target.

In some cases, such as when two or more action buttons call up wholly different displays in the same area, only one button may be active/highlighted at any one time. In other cases, such as when choosing what to display on a map, *many* related action buttons can be active at the same time.



SELECTION BUTTONS

Selection buttons differ from action buttons in that selection buttons don't actually *do* anything by themselves. They are used to make a choice from a selection of two or more items which will be acted on by associated action buttons. For example, on a starship's COMXMT quadpanel (Comm Transmitter) there is a "message destination" control bank with four selection buttons (FWS, GRP, ENS, and OUT) each representing a category to which you can send messages (FWS-FW ships, etc.). The act of selecting any one of these buttons does nothing by itself, as you are simply telling the CCSI2 which option you wish to use when you next press the related action buttons (SELECT or ALL).

Selection Buttons are *always* a pale blue in color and a highlighted item is displayed as a lighter blue. In all cases selection buttons can be clicked on using the mouse. In a few modes when using the keyboard it is necessary to use the arrow keys or related "scroll" action buttons to highlight the selection.

Many times, when in clusters of two or more related selections, only one selection button may be active/highlighted at any one time.

MARQUEES

At the top of each and every quadpanel, and at the top of rolldown menus and some other panels. Is a small gray bar upon which text can appear.

On starship quadpanels and fullpanels these marquees are usually blank. When the system must report an error or other message, the text will appear scrolling across the marquee.

ROLLDOWN MENUS

One of the biggest innovations in CCSI2 over CCSI was the inclusion of "rolldown" menus, which eliminated the need for cluttering quadpanels with things like missile selection lists. In most cases when numerous options are available, such as picking ships to target or messages to send, a rolldown menu will appear.



When a rolldown appears, a yellow "rod" telescopes out from the button which triggered it, and from it a column of buttons "rolls down" like an old fashioned windowshade. (Actually, the menus can roll down or *up*, depending on where on the screen they must appear.)

Buttons can be selected by clicking on them, or by using the number keys on your keyboard. The first item is always **1**, and following ones are numbered consecutively.

There are two types of rolldowns. The first requires you to make a single selection, such as arming certain missiles. As such, the rolldown contains only action buttons. In this case, selecting any of the buttons causes the selection to be made. The rolldown immediately "rolls up" and vanishes.

The second type of rolldown requires you to make one or more selections, such as picking which types of items you wish to display on the NAVMAP quadpanel. Since multiple selections are possible, you are presented with a rolldown containing blue selection buttons. When you have highlighted the selections of your choice, pressing the associated action button(s) on the bottom bar causes the rolldown to "roll up" and vanish.

If you decide you don't want to make any selections on a rolldown, an **ABORT** action button allows you to do so.

A rolldown can present up to nine options at one time. If more than nine items are available,  and  buttons appear, allowing you to "page" through the options.

If there are no options available, the top and bottom bars will appear, but no selections will be available. In such a case, clicking on the **ABORT** button sends the rolldown away.

Just under the top bar of the menu is a small gray text field, in which may appear a description of the types of items you are being asked to choose from.

THERMOMETER SCALE

There are two types of thermometer scales: pure readouts and controls. Those that act as pure readouts have a carat (^) shaped "arrowhead" pointing at the scale. Those that serve as controls have a solid arrowhead.

These are used to set values that require a wide possible range or fine-adjustments of a value. The scale bar represents the potential range of the value, and the small arrowhead parallel to the scale indicates the current value's position along the scale. These scales are used throughout the program, for everything from setting map view radii to adjusting the power level of your weapons.

To operate such meters, simply move the arrowhead pointer along the scale until the desired value appears (either parallel to the scale or in a value readout nearby [next item]). To adjust the setting with the mouse, click and hold the mouse button on the arrowhead and drag the arrowhead along the scale.

To adjust the value with the keyboard, press the indicated 'move' key once to start the arrowhead moving, and press any key again to stop it. These keys start moving the arrowhead slowly, but the longer the arrowhead moves the faster it goes. This acceleration makes it possible to move across large ranges quickly, but can make fine-positioning problematic. To avoid this when making small adjustments, quickly tap the arrowhead move keys on and off, which will not give the arrowhead time to accelerate.

NOTE: In many cases, these scales are rather 'coarse', and fine positioning using the mouse is impossible. Mouse users can use the keyboard commands to fine-tune their settings on such scales.

VALUE READOUT

Several types of these readouts are seen on CCSI panels. Their purpose is to list information about settings or related controls.

For example, a value readout alongside a thermometer scale for setting EBW power would display the percentage of hitting power selected (000% to 100%), or, one alongside CHASE and INTERCEPT controls would identify the item you are pursuing.

The most common value readouts are small boxes, pinkish-orange in color, which are usually just large enough to hold the values to be displayed. The second type or value readout simply displays white numbers on black backgrounds.

STATUS METERS

A status meter is a bar that, when at maximum length, indicates that the item in question is at 100%. As the bar shrinks, it indicates the current percentage. Such bars are used in the Master Control Bar to indicate the approximate operational capability of each of your ship's primary systems, as well as to indicate the amount of bulk matter capacity your ship is carrying. Similar readouts appear on several TAC quadpanels to display the operational capability of the systems of targeted ships and outposts, and one is used to show the power-up status of the EBVs.

USURPER BOXES

Occasionally, when you access a particular mode or function a green topped and yellow bordered subpanel will pop up, either over part of the display or within a small "Alkis Datapad." This is known as a "usurper" box because it usurps control from whatever panels you are working with. When a usurper box is present you cannot work with any controls outside of the usurper's own. You must send the usurper box away (usually by operating a **CANCEL**, **ABORT**, **DONE**, or **OK** button) before you can again work with other controls.





Usurper boxes are most commonly used for alert messages and warnings. Other time then act as submenus, providing extra options to those displayed on the main panel you are working with.



If an usurper box features *no* action buttons, such as when the "One moment please..." messages appear, then the box is under system control and will automatically disappear when the computer is ready to proceed.

OUTSIDE YOUR SPACECRAFT

There are additional interface variants you will encounter when you leave your starship. Most of these you will encounter at the new FWAH Headquarters on the Cetus Amicus O-Tower.

CLIPBOARD SELECTORS

When you are offered a list of items to choose from, the usual way of presenting the list is through a clipboard selector. The clipboard CCSI screen features numerous selector buttons, each of which can contain an item (many times listed alphabetically). The current selection is whichever item is highlighted. To select an item with the mouse, you merely click on it. To select an item with the keyboard, simply press the  and  keys to move the highlighter bar to the item you want. In the case of side-by-side selector lists, you must use the  and  keys to move through the right-hand list.

If a list contains more items than can be displayed at one time, you can press on the "page forward" and "page back" buttons alongside the list (often represented by  and ).

As with all selection buttons, simply highlighting an item out of the list will not do anything until you press a related action button.

Once you have highlighted a choice on the clipboard selector, it is sent away by selecting an action button on the selector (i.e. - **DONE**).

If you wish to abort the selection process, press the **ESC** button on the clipboard proper.

SCROLLER SELECTORS

In some places, the standard selector becomes impractical because of limited display space. In such cases, a "scroller" selector is employed, which works somewhat differently from the standard selector. A scroller selector usually lists only three items at any one time, with the second item being automatically highlighted. By pressing on the scroll-up and scroll-down action buttons (or pressing their key equivalents), the list of items will scroll, allowing you to place any item in the list on the highlighted bar. The highlighted item is the choice to be acted on by associated action buttons.

You cannot "click" on any item in a scroller selector, as there are no "buttons" to pick. The items in the scroller list may be gray or green or some other color, with a lighter highlighter.

Scroller sectors sometimes have related action buttons in a bar just above and/or below the selector itself.

TEXT EDITING FIELDS

There isn't much need for *typing* in **Rules of Engagement 2**, but occasionally you are required to enter a name for a game, mission, captain, etc. In these situations, you will be confronted with a text editing field. To type in the field you must activate the associated action button (like **NAME**, **EDIT NAME** or such), which will result in the appearance of a colored bar (usually blue) in the text field, inside which is a slim vertical cursor. Most text editing fields can hold up to 20 characters. You can use the Backspace key on your computer keyboard to delete existing text. The cursor and delete keys have no effect.

Most common alpha-numeric keys can be used in such fields. All text will appear in uppercase (capital) letters.

To exit a text editing field, simply click your mouse anywhere on the screen, or press the Enter/Return key on your keyboard.

NOTE: The numeric entry fields on the captain builder and the large "dossier" type text fields found throughout the various builders work differently from these fields and are documented in the Builder Manual.

A.N.D.I.

On properly equipped systems, CCSI2 includes a special new auxiliary system: the Auto Narrative of Damage and Intelligence, or **A.N.D.I.** A.N.D.I.'s job is to affirm various commands and provide critical information regardless of which systems you are currently accessing.

Normally, A.N.D.I. doesn't talk much, but the moment the ship gets in trouble, she'll let you know. A message like "Drive system damaged," means you'd better do something before your engines are completely destroyed, and a message like "Shields destroyed" means you'd better get some distance from your attacker(s) before they destroy your ship.

A.N.D.I. is not mandatory. A.N.D.I. vocals can be toggled from the DRPSET quadpanel, and also from the main configuration panel (game entry screen).



Some typical places where A.N.D.I. speaks up:

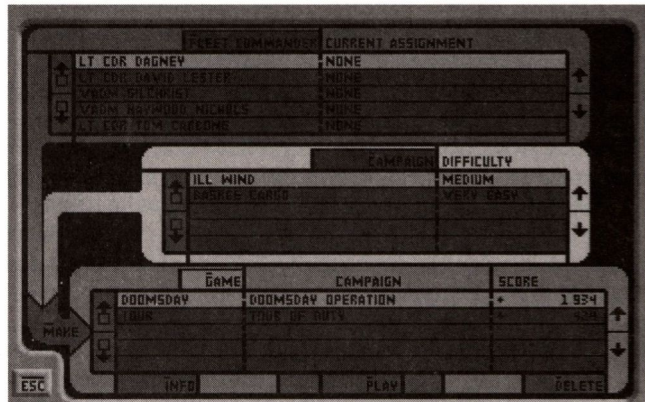
NAVHLM	Manually setting a course or velocity
TACFIR	AUTO EBW toggled
	AUTO target toggled
	Missile selected
	EBW power adjustment
GENERAL	Reports on damage
	Advises when repairs are completed
	Reports received message (is COMRCV is not up)



[Please note that if you have the game time accelerated you may very likely get a lot of confusing partial messages from A.N.D.I., because events may happen so fast in accelerated time mode that A.N.D.I. won't be able to finish one statement before the next message event occurs.]

Creating a Saved Game

The assignment screen, accessible from the main game screen by selecting the "Assume Command" button, is where you can deploy your Fleet Commander to a campaign.

The assignment screen is composed of three lists: Fleet Commanders, Campaigns, and Games. If there are more items in each list than will fit in the display, the lists can be scrolled up and down using the  and  buttons.



Keyboard Note: The  and  keys are used to select an item. Since the same keys are used for all three lists, each list has a selection button above the list. Only one list can be "active" (selected) at a time, and this is the list that will be affected by keypresses. The selection buttons are FLEET COMMANDER (F), CAMPAIGN (C), and GAME (G).

The MAKE (M) button creates games for you to play. Prior to pressing this button, you must first highlight the Fleet Commander and campaign you wish to play. Pressing the make button will bring up an usurper box allowing you to enter a name for your game. Press EDIT NAME (E), and type in a name up to 20 characters. Press ENTER when finished. If you want to proceed with making a game, press OK (O). Otherwise, you may cancel by pressing CANCEL (C).

Once your game has been created, it will appear on the game list. The game list has three buttons associated with it.

- INFO (I) Brings up a clipboard containing statistics about the currently highlighted game. Press the ESC key to remove the clipboard.
- PLAY (P) Pressing this button will play the currently highlighted game.
- DELETE (D) Pressing this button will delete the currently highlighted game. Deleting a game will restore the Fleet Commander's stat to what they were prior to commencing the game.

NOTE: If you are designing your own campaign, there is a "designer's aid" built into the play button. If you right-click on the button (or, for keyboard users, hold down the shift key when pressing "P"), an usurper box will appear, allowing you to select which "node" of the campaign tree you wish to play. In this way, you need not play through many missions of a campaign just to test a particular mission. If the campaign is password protected, you will first be required to enter a password. This prevents the players of your campaign from "cheating" by jumping to different points within the campaign.

Summary of Creating a Game

Given the functions of the assignment screen, here are the steps you must take in order to play a game:

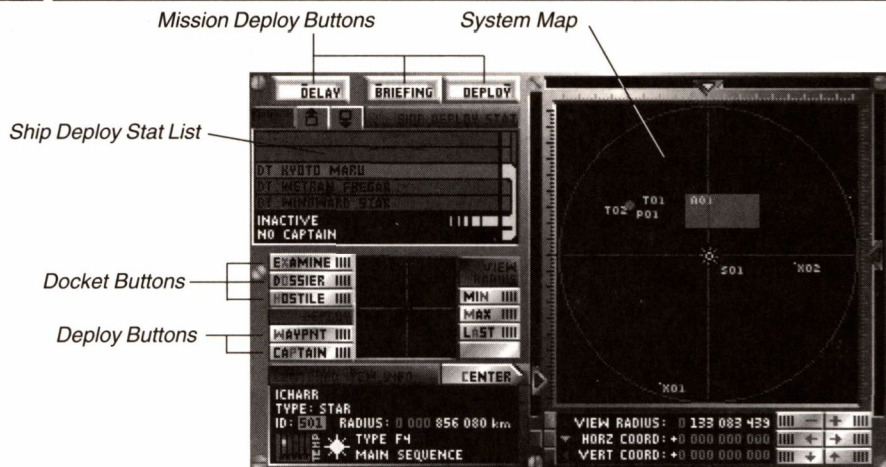
- 1) If you don't already have a Fleet Commander, create one using the "Recruiting / Officer's Quarters" button from the main game screen (see FLEET COMMANDER BUILDER in the BUILDER MANUAL for detailed instructions).
- 2) Bring up the assignment screen (using the "Assume Command" button from the main game screen).
- 3) Select the Fleet Commander and the campaign you wish to play by clicking on them (or, for keyboard users, by using the **↑** and **↓** keys).
- 4) Press the MAKE (M) button and, when the usurper box appears, press the EDIT NAME (E) button.
- 5) Type in a name for your game (such as "My First Game") and press enter.
- 6) Press the OK (O) button to create the game.
- 7) Once your game appears on the game list, select it by clicking on the game (or, for keyboard users, by using the **↑** and **↓** keys). Press PLAY (P) to play the game.

Deploying Ships and Captains

As you begin each mission in a campaign, you must deploy your ships and captains. This is done on the *Mission Deployment* screen.

CCSI2 NOTE: The interface here uses not the standard CCSI buttons (as described in PART III: THE CCSI2 INTERFACE), but "hardware" variations on them. You can always identify a button, since one letter of the button label (the keyboard equivalent) will be highlighted tan. In a small "green list display" is an additional variant: green readouts with one entry, selected by outside controls, standing out in a brighter green.

However, the panels that appear within the *Map Display* use the CCSI2 buttons system, with brown and blue colors identifying action and selection buttons, respectively.



The *Mission Deployment* screen has several sections: a *System Map* panel which can also display data panels; the *View Radius* buttons; the **CENTER** button; the *Ship Deploy Stat* list; the *Docket* buttons; the *Deploy* buttons; and the *Mission Deploy* buttons.

In each campaign, you are given a limited amount of certain resources, namely starships and Captains. Each campaign contains a list of Captains and a list of ships, which are available for all missions in the campaign (except for those destroyed during a mission). Your task as Fleet Commander at the start of each mission is to manage these resources effectively. The ships and captains are completely interchangeable, meaning any Captain, including yourself, can helm any ship in the group.

In each mission, there are one or more *waypoints* which serve as entry points for your ships into the solar system. Only a certain amount of *resource points* — a measure of FW firepower — are allowed to start at each waypoint. Each ship is given a value in *Resource Points*, based on the parts used in its construction (see APPENDIX III: THE FW FLEET for the actual stats). In order for a mission to begin, the total value in *Resource Points* for all ships assigned to a waypoint must be less or equal to the number of points allowed at that waypoint.

Comprehensive Overview

Use the *Map Controls* at the bottom of the screen to view the system, and specifically study the areas surrounding each waypoint. To view the stats and resource point value for each ship, select one from the green list in the top-left corner using the and buttons and press **EXAMINE** (X).

When you have an idea of what ships you want to use in the mission, press **WAYPOINT** (W) to access the *Waypoint Assignments* panel. Select a waypoint using the and buttons, and check the number in the TOTAL RP'S ALLOWED readout. Some waypoints may have 0 Rp's assigned to them; this means that they are unavailable to your ships at the start of the mission. Select ships using the and buttons, and press **ADD** (A) to assign them to the current waypoint. The black readouts below the ship list will confirm the assignment. The total RP's that you assign to each

waypoint is displayed at the bottom of the panel — if you have assigned too many RP's, the UNALLOCATED RP's display will read "OVER". Make sure that you do not go over at any waypoint, and that you take advantage of all waypoints that have RP allowances. Press **OK** (K) when you are done.

Next, press **CAPTAIN** (P) to access the *Command Assignments* panel. To review a captain's record, first select one from the list either by clicking on them with the mouse, or by pressing the **↑** and **↓** keys; if there is more than one page of names you can use the **←** and **→** buttons to view the rest. Then, press **DOSSIER** (D) to view their service record and profile. When you have decided which ship (if any) for which this Captain is appropriate, select the ship with the **☒** and **☑** buttons and press **ASSIGN** (A); the black readouts below the ship list will confirm the assignment. Do this for each captain until every ship assigned to a waypoint has a Captain aboard. Press **OK** (K) when you are done.

REMEMBER: Make sure that you, as Fleet Commander, are assigned aboard a ship. Your fellow captains are going nowhere without you!

At any time during this process, you may use the following buttons to view information about your mission, your fleet and your enemy. **BRIEFING** (B) replays the mission briefing. **DOSSIER** (D) shows the service record and profile on the captain, if any, assigned to the currently selected ship. **HOSTILE** (H) displays the docket on the enemy race in this solar system.

When you have assigned all the ships you want, and assigned a captain (and yourself) to each of them, you may press **DEPLOY** (Y) to launch your ships and begin the mission. If you in the end decide to put off the mission for another day, you may press **DELAY** (D).

What follows is a breakdown of the features of the *Mission Deployment* screen:

System Map

The map display that fills the left side of this screen works virtually identically to the map in the **STARCHARTS** section of the campaign builder (see MAP/SYSTEM BUILDER in the BUILDER MANUAL for details), with the addition of the deployment controls described below. Unlike the NAVIGATION map available within the game, you can center this map on any point in the system and view it at any magnification.

The slider for manually adjusting the horizontal coordinate appears along the top of the screen, and the vertical coordinate slider appears along the right side. The map scale slider lies on the left side of the map. The arrowheads in each slider can either be dragged with the mouse or moved using the buttons on-screen (located below the map) or their equivalent keys.

You may also adjust the map radius with the mouse, as on the NAVIGATION map panels. Moving the mouse over the map activates four yellow indicators which frame an area. Click the left button to zoom in, and that area will be magnified to fill the map. Click the right button to zoom out, the area shown in the full display will be shrunk to fit inside the framed area.

Furthermore, additional off-map controls can be used to alter the view center and radius (see next item).

The *Map Display* will sometimes be replaced with standard CCSI2 panels. These panels are used to make waypoint and command assignments, are explained below.

VIEW RADIUS



This subpanel, located to the left of the center of the map display, consists of two items: three action buttons and a miniature representation of the entire system map. The first action button is **MIN** (N), and activating it causes the map radius to be set to minimum radius (75 kilometers). The second button is **MAX** (M), which sets the map radius to maximum radius (2 billion kilometers). The third button is **LAST** (A), and it is like an "undo" function, restoring the map radius to what it was prior to that last radius adjustment.

The miniature map is used to show the size and location of the current map view relative to the full system map. A square frame within the mini map indicates the current map area. If you reduce the view area of the large map, the framed area will shrink. And, if you alter the view center, the frame will move off-center as well.



CENTER (C)

This arrow-shaped button, located below the VIEW RADIUS buttons, is used to quickly center the map view on specific items within the system. Pressing **CENTER** activates a sub-menu consisting of the five possible objects on which you can focus the display:

WAYPOINT (W)	Center on a waypoint
STAR (S)	Center on a star
PLANET (P)	Center on a planet
FIELD (F)	Center on an asteroid or radiation field
OUTPOST (O)	Center on an outpost

Activating any of these controls causes a panel to appear with which you identify the specific item of the indicated type to center on. Highlight the item on the panel and then press **SELECT** (S); if the list is larger than the panel's display you may use the  and  buttons to view the rest. This causes the map's horizontal and vertical centering coordinates to be altered to center on the selected item. The name, I.D. and any astrophysical data on the item will appear in the large black readout below the **CENTER** button.

Ship Deploy Stat List

The green display in the top-left corner of the screen contains lists all of the FW ships available to you in the current campaign. The ship in the center of the display is highlighted at all times, making it available for use with other subpanels and controls on this screen. To select another of the ships, use the  and  buttons. The display only shows five FW ships at the time, but these buttons automatically scroll the list one entry at a time.

Connected to the currently highlighted ship by a yellow bar is a black readout directly below the list. This displays two important pieces of information about that ship: its current assignment, and its current Captain. The first line of the readout will read "ASSIGNED TO WAYPOINT Xnn" (where nn is the I.D. number of a waypoint) if the current ship is assigned to a waypoint, and "INACTIVE" if it is not. The second line will display the name whatever Captain may be assigned to the ship, or "NO CAPTAIN" if none have been assigned.

When the WAYPOINT ASSIGNMENTS and COMMAND ASSIGNMENTS panels are displayed on the *Map Display* (see below), this list will be the only part of the screen aside from the panel left active. You will be able to select different ships while those panels are active.



Docket Buttons

Located below the left side of the *Ship Deploy Stat* list are three buttons that display dockets of information pertinent to the current mission. All of them display their reports on a "folder" type panel that appears on top of the current screen. The reports are:



EXAMINE (X)

Displays the stats for the ship currently highlighted on the *Ship Deploy Stat* list. This allows you to consider the strengths of each ship when selecting them for waypoint assignments, or when selecting Captains for command assignments.

DOSSIER (O)

Displays the dossier on the Captain assigned to the ship currently highlighted on the *Ship Deploy Stat* list. Use  and  if necessary to read the entire docket. If no Captain is assigned to the current ship, this command will not work.

HOSTILE (H)

Displays the intelligence report for the enemy race operating in the current solar system. Use  and  if necessary to read the entire report.

Deploy Buttons



Located below the *Docket* buttons, these two buttons access panels that allow you to assign ships to waypoints and Captains to ships, respectively. The two panels appear in the location otherwise used for the *Map Display*. The panels that each button accesses are detailed as part of their descriptions:

WAYPNT (W)

Accesses the *Waypoint Assignments* panel, from which FW ships are assigned to the one or more waypoints in the system. The majority of the panel is filled with a list of the ships assigned to one waypoint, which starts out blank. The panel can be broken down into two sections: the Waypoint Selection Controls; and the Ship List.

The features of the Waypoint Assignments panel are broken down below:

Waypoint Selection Controls



The controls at the top of the panel allow you to select and identify one of the waypoints in the system as the one to which ships may be assigned. The  and  buttons at the top of the panel allow you to select different waypoints in the system. The readout between them shows the I.D. of the currently selected waypoint.

Other readouts display pertinent information about the current waypoint. The two numbers in the top-right corner of the panel show the map coordinates of the current waypoint. Below them, the FW CARGO readout shows the amount, if any, of cargo stored at the current waypoint. This readout becomes important if the mission involves the transfer, capture or destruction of cargo from a waypoint.

The readout below FW CARGO is the most important of them all. TOTAL RP`S ALLOWED shows how many *resource points* worth of FW ships may be assigned to the current waypoint. Each ship has a rating in *resource points*, calculated by tallying the resource point ratings for each of its components (as noted in APPENDIX III: THE FW FLEET). Waypoint assignments are restricted so that the total resource points for all ships assigned to a waypoint must be equal or less than the TOTAL RP`S ALLOWED. This system is managed by the *Ship List* (see next item).





Ship List

The majority of the panel is taken up by a list of ships assigned to the waypoint. When you start planning the deployment for the mission, the list will be empty.

ADD (A), a button at the bottom of the panel, lets you assign ships to the current waypoint. To use it, use the  and  buttons to select a ship from the *Ship Deploy Stat* list (see above). Then, press **ADD** and it will be placed on the list.

The tan readouts to the right of each space on the list keep track of the *resource point* values of each ship. When a ship is **Added** to the list, the readout next to it shows its value in resource points. The total of all values on the list is calculated and shown in the TOTAL ALLOCATED readout at the bottom of the list.





The readout below TOTAL ALLOCATED shows the number of resource points still allowable at this waypoint. If you have allocated fewer resource points than are allowed at the waypoint, this readout shows how many are left. If you have allocated more resource points than are allowed, this readout displays the word "OVER". You will not be able to exit the panel if any of the waypoints are over-allocated.



To the left of **ADD** is **DELETE (D)**, which lets you remove ships from the ship list. To select a ship to delete, use the  and  keys to highlight one, or simply click on it with the mouse. If the list is longer than can be displayed, press  and  to see the rest. When the ship you want to remove is highlighted, press **DELETE**.

OK (K), the button to the left of **DELETE**, lets you exit the panel when you are done making waypoint assignments. If you have over-allocated ships to the waypoint, a warning message will appear and you will be allowed to make changes.

CAPTAIN (T)

Accesses the *Command Assignments* panel, from which FW ships are assigned to the one or more waypoints in the system. The majority of the panel is filled with a list containing all of the captains assigned to the current campaign.

The procedure for assigning Captains to ships is simple. First, select a Captain from the list with the  and  keys, or by clicking on it with the mouse; if there are more than one page of names you can use the  and  buttons to view the rest. The current Captain will be highlighted.

When you have chosen a Captain, you can review his service record by pressing **DOSSIER** (S), a button at the bottom of the panel. The dossier will appear on a separate, "clipboard" type panel. Press  and  to view the entire report, and press **Esc** to remove it when done.

From viewing the dossier, you should have a good idea of the types of responsibilities with which this Captain can be trusted — and therefore which ship he should be assigned to command. It is quite possible that you'll decide that he can't be trusted, and therefore shouldn't be assigned at all. In any case, you will most likely have more Captains than you have ships assigned to waypoints, and therefore some will "make the cut" and some won't.

If you now have a ship in mind for the current Captain, select it on the *Ship Deploy Stat* List in the top-left corner of the screen (see above). Then press the **ASSIGN** (A) button, located to the right of **DOSSIER**, and it will be assigned to the current Captain. The readout next to the captain's name will read "YES" to indicate that he/she/it is in use. Also, the black readout at the bottom of the display will indicate the name of the assigned ship, and the name of the waypoint (if any) to which the ship has been assigned.

If you want to unassign a Captain, all you need to do is select him/her/it, and press the **CLEAR** (C) button located to the right of **ASSIGN**.

When you are done making command assignments, press OK(K) and the panel will be removed.

IMPORTANT: Before you **DEPLOY** for the coming mission (see next item), you should make sure that a Captain has been assigned to every ship that has been assigned to a waypoint, and that you (as Fleet Commander) has been assigned to a ship. If these two guidelines are not met, then you will not be allowed to **DEPLOY**.

Mission Deploy Buttons

The buttons in the top-left corner of the screen allow you to make the final decisions of mission deployment, as well as review the briefing for the current mission. They are:

- DELAY (D)** Lets you delay deployment into the current mission — in other words, it lets you cancel the current campaign and return to the *Campaign Assignment* screen. Delaying the mission does not save any waypoint and command assignments you have made, so you will have to redo them.
- BRIEFING (B)** Reviews the briefing for the current mission. The briefing may help you decide which waypoints should be assigned to which ships.
- DEPLOY (Y)** Accepts the current waypoint and command assignments, and begins the mission. If you have not assigned a Captain to each ship assigned to a waypoint, or have not assigned the Fleet Commander (you) to a ship, then you will be warned and the mission will not start.

PART V: THE GAME PANELS

How to...

This section explains each and every panel used to command your starship and give orders to your fleet. It does not explain the panels used to start or resume a campaign (see PART IV: DEPLOYING FOR A CAMPAIGN) or the builder panels (see the Builder manual). Each panel's purpose and functioning is detailed.

Screen buttons are listed in uppercase bold text, with the key equivalent listed, in parenthesis, immediately following the button text, as in: "...use **BUTTON (B)** to..."

Please note that many options will bring up alert messages, such as "are you sure you want to delete...", and the usurper boxes bearing these messages are *not* always noted in the text because, as a rule, what to do when one appears is fairly self-evident.

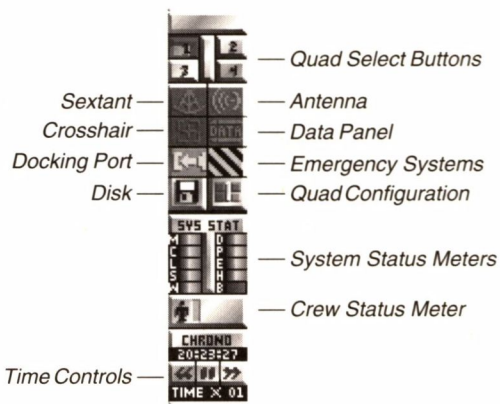
Each panel is listed by number and name. Operation of the controls on these panels are as described in PART III: THE CCSI2 INTERFACE, unless otherwise noted.

THE MASTER CONTROL BAR

Running vertically across the display is the Master Control Bar, which contains important readouts and the controls which provide access to all ship's quadpanels.

The Master Control Bar is usually located at the center of your command display, with up to two quadpanels appearing on either side. However, if you access a full-size panel the bar will move to the left to accommodate it.

The Master Control Bar contains four numbered selection buttons at the top, eight icon action buttons below them, and three small action buttons at the very bottom. One of the four numbered buttons will be depressed at any time (pressing any of the other buttons "pops up" the currently depressed one). The eight icons are of the action button type, and activating one summons a rolldown menu. The icon is immediately deactivated when a rolldown menu option is selected. Of the three buttons at the bottom, the first and last are trigger-switch buttons, activating and immediately deactivating themselves. The middle button of the last three is a switch-type button, remaining active until it is selected again to toggle it "off."



KEYBOARD NOTE: The action buttons in the Master Control Bar do not have key equivalents listed on-button, however, they all have keyboard equivalents. The keyboard equivalents are noted as each button's functions are detailed.

Starting at the top of the bar and moving down, the features of the Master Control Bar are:

QUAD SELECT ONE, TWO, THREE, FOUR (1, 2, 3 and 4)

Four buttons, arranged in a rectangle, represent the four locations for quadpanels on your CCSI2 display. When depressed, a button indicates where the next quadpanel you enable from the Panel Access menus should appear.

KEYBOARD NOTE: Two or more quadpanels on screen may use the same keys to perform different actions. For this reason, keyboard commands will be fed **only** to the quadpanel currently selected with the **QUAD SELECT** buttons. To switch quadpanel control, use the appropriate Quad Select button by typing its number, from 1 to 4.

QUAD ACCESS ICONS

Below the **QUAD SELECT** buttons is a block of six icons, arranged two-across by three-down. These icons call up list boxes that allow you access any and all of your ship's quadpanels. Selecting a quadpanel from these list boxes loads it into the location chosen by the currently-selected **QUAD SELECT** button.

KEYBOARD NOTE: Each of the Quad Access icons, and the two icons below them, are triggered by a function key, starting with F1 and ending with F6. The top-leftmost icon is F1, the one to the right of it is F2, and so on down the list.

Each QUAD ACCESS icon represents one of the six categories of quadpanels available:

SEXTANT (F1)

Selecting this icon allows access to three NAVIGATION quadpanels, from which you can steer your ship, probe items in the vicinity, and consider your strategy. The quadpanels are:

NAVMAP	Navigational Map
NAVHLM	Navigational Helm
NAVSEN	Navigational Sensors

Right-clicking on this icon (Shift-F1) accesses a full-sized panel (FULNAV) which combines features of all three quadpanels.

ANTENNA (F2)

Selecting this icon allows access to three COMMUNICATIONS quadpanels, from which you can transmit and receive messages, and manipulate your communications hardware. The quadpanels are:

COMRCV	Communications-Receive
COMXMT	Communications-Transmit
COMPWR	Communications-Power

CROSSHAIR (F3)

Selecting this icon allows access to five TACTICAL quadpanels, which include all weapons and defensive systems controls, and from which you launch all attacks and fight all battles. The quadpanels are:

TACFIR	Tactical Fire Control
TACMAP	Tactical Map
TACMAN	Tactical Maneuvers
TACDEF	Tactical Defenses
TACSEN	Tactical Sensors

DATA PANEL (F4)

Selecting this icon allows access to six DATA RETRIEVAL quadpanels, which report on all aspects of your fleet and your mission. The quadpanels are:

DATFLT	Overall Fleet Data
DATSHP	Individual Ship Data
DATDKT	Dockets of Captains, Enemies and Neutrals
DATOBJ	Mission Objectives Checklist
DATSET	Setup Options
DATEVA	Evaluation Report

Right-clicking on this button (Shift-F4) accesses a full-size panel (FULDAT) combining features of the DATFLT and DATSHP quadpanels.

DOCKING PORT (F5)

Selecting this icon allows access to four DOCK & REPAIR quadpanels, which control all systems for docking, towing, transferring cargo and repairing systems. The quadpanels are:

DRPREP	Repair Systems
DRPTOW	Towing Systems
DRPDOK	Docking Systems
DRPCGO	Cargo Systems

EMERGENCY SYSTEMS (F6)

Selecting this icon allows access to five quadpanels, which control the ship's EMERGENCY SYSTEMS. The quadpanels are:

EMRTRN	Emergency Transportation
EMRDES	Self-Destruct Mechanism
EMRCOM	Emergency Communications
EMRTHR	Emergency Thrusters
EMRPAN	Master CCSI2 Panel Status

The two buttons directly below the QUAD ACCESS buttons control disk options and CCSI2 configuration options:

DISK (F7)

This icon accesses several DISK OPERATIONS. Three choices are always available in this list box. **SAVE AND EXIT** saves your current game position and exits the campaign, allowing you to resume the campaign later and continue precisely where you left off. **EXIT WITHOUT SAVING** exits to the Campaign Assignment panel without saving the current position, so that when you restart the game it will resume at the beginning of the campaign or at the last place

you *did* save the position. **SAVE AND CONTINUE** saves your current position, then returns you immediately to the game in progress.

A fourth choice appears when you have successfully completed all objectives in the current mission. **END MISSION** allows you to exit the current mission and receive your mission evaluation report. This is the equivalent of activating your ship's hyperdrive at the end of a mission, but unlike using the hyperdrive there is no delay involved.

QUAD CONFIGURATION (F8 and Shift-F8)

This icon accesses the **STORE CONFIGURATION** and **RECALL CONFIGURATION** commands. "Configuration" refers to the arrangement of quadpanels on the screen. Left-clicking on this button displays a rolldown menu allowing you to **RECALL** one of four stored configurations to the screen. Right-clicking (Shift-F8) on this button displays a rolldown menu allowing you to assign the current arrangement of quadpanels to one of the four stored configurations for the campaign.

NOTE: The four configurations maintained by these commands are only stored until you exit the current game. You can use the commands on the **DATSET** quadpanel to **SAVE** and **RELOAD** permanent configurations.

SYSTEM STATUS METERS

Immediately below the eight icons is a readout featuring two columns of five small status bars/meters, each individually lettered. These represent the status of each of your ship's nine primary systems, and what percentage of your ship's bulk matter storage capacity is filled. If the status meter for a system completely fills its allotted space, that system is 100% operational. Each time a system sustains an additional 10% of damage, the meter's width slips a notch. Once a meter is completely depleted, the system in question is 0% operational, and technically "destroyed." (See PART II: TACTICS of the TRAINING MANUAL for details on system damage and damage control.)

In the case of the bulk matter readout, a full status bar indicates 100% capacity on board. Each time an additional 10% of the total bulk matter capacity is depleted, the meter's width slips a notch. Once the meter is completely depleted, the bulk matter store is empty.

The letters next to each meter indicate the systems they measure, and stand for:

M	ComSen (Communications/Sensor) Package
C	Computer
L	Life Support
S	Shields
W	Weapons
D	Drive/propulsion
P	Primary Power Systems
E	Emergency Power Systems
H	Hull
B	Bulk Matter Storage

CREW STATUS METER

Below the SYSTEM STATUS METERS is a small picture of a person standing next to a colored vertical bar. This represents the current status of your ship's crew. The full height of the bar represents 100% of your crew. Lengths of the bar will change color to represent the percentages of crewmembers injured (yellow) and dead (red). The bar itself does not change in length.

CHRONO

The readout under this label is the ship's "mission chronometer", a clock which shows the elapsed mission time in the following format:

HOURS:MINUTES:SECONDS.

This clock is always running unless the game is paused or you have accessed a panel with its own clock (such as SQUAD DEPLOYMENT when boarding an outpost or ship). The default is for the clock to run at "realtime," with one second of gametime equaling one second of realtime. This can be changed by using the slowtime and speedtime controls (<< and >>) described below.

(The CHRONO readout may freeze momentarily when you switch panels. However, time still passes during these intervals, and the readout is updated when once the panel is fully displayed.)

CHRONO BUTTONS

Three buttons at the bottom of the screen control gametime, allowing you to speed it up, slow it down or pause it.

KEYBOARD NOTE: The Chronometer slowtime, speedtime and pause buttons are noted below.

<< (F9)

This button is a trigger which, when activated, immediately divides the current gametime multiplication factor in half. For example, if the gametime setting is at x8 before you activate the << button, it will read x4 after you have activated it. The minimum gametime rate is x1.

Right-clicking on << (Shift-F9) immediately jumps the speedup back to realtime (x1) regardless of the current rate.

|| (Esc)

This button is not a trigger, but toggles the PAUSE mode on and off. When highlighted, || freezes the game and chronometer, as well as disables all other buttons and controls.

NOTE: In games set at normal and veteran difficulty, pausing the game results in the screen being cleared of everything but the Master Control Bar. This is done to keep the game "real"; in actual combat you would not be able to stop time in the heat of battle and leisurely weigh your options.

At recruit difficulty, the screen is not cleared when the game is paused.

>> (F10)

This button is a trigger which, when activated, immediately doubles the current gametime multiplication factor. For example, if the gametime setting is at x8 before you activate the >> button, it will read x16 after you have activated it. The maximum gametime rate is x32, where 32 seconds of gametime pass for every second of realtime.

Right-clicking on >> (Shift-F10) immediately jumps the speedup to maximum (x32) regardless of the current rate.

TIME X n

This readout, at the very bottom of the Master Control Bar, shows the current rate of gametime versus realtime passage, with n representing the multiplication factor of gametime. Gametime defaults to realtime (x1), where one second of gametime equals one second of realtime. At almost any time this can be changed, up or down, doubled to two (x2), four (x4), eight (x8), sixteen (x16), and finally thirty-two times realtime (x32) (where each second of realtime equals 32 seconds of game time).

The TIME X n factor is controlled by the CHRONO buttons, located above it.

NOTE: The gametime can also be automatically altered by the AUTO TIME DECREMENT option, adjustable under the DATSET panel and also from the CONFIGURATION menu accessible from the game's main entry screen.

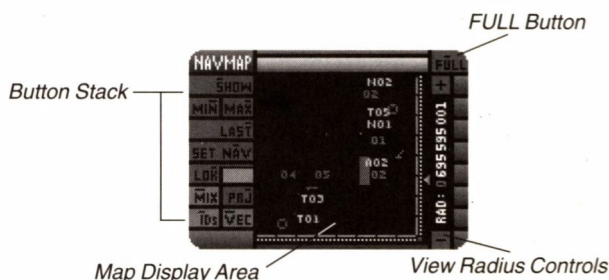
NAVIGATION PANELS

The following panels relate specifically to maneuvering your ship and studying the “field of battle”. Each of the three quadpanels is devoted to a separate aspect of navigation: viewing the map (NAVMAP), controlling manual helm and autopilot (NAVHLM), and gathering data on vessels and objects (NAVSEN).

A fourth, full-size panel combines elements of all three quadpanels. Pressing the **FULL** (U) button at the top-right corner of any of the Navigation quadpanels accesses the combined NAVIGATION panel. This temporarily shuts down all quadpanels and moves the Master Control Bar to the left edge of the screen. When you shut down this panel, the quadpanels and the Master Control Bar are returned to their previous locations. The changes to functions from the quadpanels to this panel are detailed separately at the end of this section.

NAVMAP — Navigational Map

This display is used primarily for planning strategy and determining manual helm control settings. It displays sensor information, or *telemetry*, from one or more of your fleet’s ships and sensor drones. It can also be configured to “mix” all telemetry into a “system overview” map. Its view scale is adjustable, allowing you to see large vistas for planning strategy or zooming in tightly for viewing action in detail. And to aid in your mission strategy, the map lets you define a “Navpoint” which you can then order other FW ships to intercept.



The map is made up of three elements: the button stack (which controls a variety of map-related functions); the map view; and the view radius controls.

The following is a breakdown of the elements of the NAVMAP quadpanel.

Map Display Area

This is where the actual map is displayed. The map is a square area the exact center and scope of which is variable depending on a ship’s position, sensor ability, or the map’s current mode (example: see **ZON** under **COMBINED NAVIGATION PANEL** later in this section).

The map display can present views ranging from a minimum radius of 75 kilometers to a maximum radius of 2 billion kilometers (the radius can be adjusted using the *View Radius Controls*), although the 2 billion kilometer radius is available only in “mix” mode (see below). The information it displays is controlled by the *Button Stack* (see below).

Button Stack



Along the left side of the NAVMAP panel is the *Button Stack*. This bank of action buttons controls a variety of map features, and are detailed as follows.

SHOW (S)

The first button on this stack is used to select which items you want the map to display at any given time. This is done to permit you to selectively display data relevant to your current operations. For instance, when tracking down enemy ships, you may not want solar system items (like planets, etc.) cluttering up the view.

Selecting **SHOW** accesses a rolldown menu with selection buttons listing all of the categories of viewable items. Highlighted items will be displayed on the map, all others will not. The items on the rolldown are as follows:

STARS	Displays all stars in the system
FIELDS	Displays all fields in the system
WAYPOINTS	Displays all waypoints in the system
OUTPOSTS	Displays all outposts in the system
PLANETS	Displays all planets in the system
FW SHIPS	Displays all FW starships in the system
ENEMY SHIPS	Displays all enemy ships in sensor range of FW ships (in recruit mode <i>all</i> enemy ships are shown, even in MIX mode)
DRONES	Displays all sensor drones in the system
MINES	Displays all mines in the system
ESCAPE PODS	Displays all escape pods in the system
NAVPOINT	Displays the current Navpoint

Not all of these can be displayed by the rolldown menu at one time; use  and  to view the rest. Choices that are highlighted will appear on the map display; the rest will not. Toggle choices on and off with the mouse, or by typing the numbers listed next to them. When you are done, select **DONE (D)**.

As indicated, these selections buttons are non-exclusive, and you can have none, all, or any combination of them active at any one time; such as having Outposts, Enemy Vessels and Friendly vessels switched on.

MIN (N) / MAX (X)

Below the **SHOW** button are two buttons which are actually an extension of the *View Radius Controls*. These allow you to set your view radius to either the minimum (**MIN**) or maximum (**MAX**) ranges of whatever telemetry you are currently using.

If you have locked onto an FW ship's telemetry with the **LOK** button, the **MAX** setting will be the maximum range of that ship's COMSEN system.

To find out what that maximum range is, you can use the **MAX** button and take note of the radius displayed on the *View Radius Controls*. Alternatively, you can use the DATSHP or DATFLT panels to look up the part number of the COMSEN system for the locked-in ship, and then refer to APPENDIX III: THE FW FLEET to look up its maximum scanning range. Remember, however, that COMSEN damage can effect telemetry.

If the map display is in **MIX** mode, then the maximum setting will be two billion kilometers. This allows you to view the entire combat map, which is four billion kilometers across.

In either **MIX** or **LOK** mode, the minimum radius is always 75 kilometers.

LAST (T)

Below **MIN** and **MAX** is another button which is an extension of the *View Radius Controls*. Any time you change the view radius, its previous setting is stored so that it may be recalled later. Using **LAST** returns the map's view radius to that stored setting.

NOTE: **LAST** only recalls the view radius for the current focal point of the display. If you change the focal point with the **MIX** or **LOK** buttons, **LAST** will not change to the previous focal point or magnification.

Selecting **LAST** repeatedly shifts the view radius between the last two settings you chose for it; if you find two settings that are both appropriate to a situation, you can use this to alternate between them.

SET NAV (A)

In the fourth row down on the button stack, **SET NAV** lets you designate one arbitrary location in space as a destination for other ships in the fleet. The NAVMAP stores one set of coordinates on the Map display as a Navpoint (which can be made visible or hidden using the **SHOW** button).

Four choices in the *FW Message Database* (COMXMT) refer to the "Navpoint" as a destination:

TOW SHIP TO NAVPOINT
 SET COURSE FOR NAVPOINT
 PLACE DRONE AT NAVPOINT
 PLANT MINE AT NAVPOINT

When these messages are transmitted to an FW ship, the current location of the Navpoint is encoded in the commands. That location is used by the receiving ships even if the Navpoint is relocated at a later time. You can therefore use one Navpoint to send two ships to different locations; just change the location of the Navpoint between orders.

To use **SET NAV**, press the button and select a location on the map (keyboard users can use the four arrow keys and press enter when done). That location becomes the current Navpoint, and will be noted with a symbol on the display (if Navpoints were enabled by the **SHOW** button).

TELEMETRY

As explained earlier in this section, *telemetry* is the sensor data produced by the ships in your fleet and any drones you have launched. You can lock the map onto the telemetry from any one FW ship or sensor drone in the solar system. As each ship has a limited scanning range, the ability to display sensor information from any of these sources is of great strategic value as it allows you to "see" more than your ship's own sensors can. Furthermore, use of it allows you to see what any ship in your fleet is up to at any given moment, or watch over areas of space not currently occupied by FW ships.

The ship or drone whose telemetry information is locked-on is selected by using the **LOK** (K) button. This button activates a rolldown menu which lists the available telemetry inputs. Select **LOK** by left-clicking to display a list of FW vessels; select **LOK** by right-clicking (Shift-K) to display a list of active sensor drones. Select one of these items to have the map display its sensor information.

Just below the **LOK** button is a small action button labeled **MIX** (X). The purpose of this button is to "mix" all received telemetry with the overall solar system map to produce a single "overview". Activating **MIX** causes any Lock-Ons to be disengaged and an entire solar system map to be displayed, allowing you to see where all of your forces are relative to the system's sun(s), planets, outposts, asteroid fields and waypoints. The mix mode map defaults to full-system view with a radius of 2 billion kilometers. The scale of the zoom can be changed using the *View Radius Controls*, as well as the **MIN**, **MAX** and **LAST** buttons.

Mix mode is useful for overall strategic planning, but it has some limits; particularly, it displays the locations of all *known* items in the system, but unknown items, such as enemy ships that are not in sensor range of any of your FW forces, are not displayed. Furthermore, you cannot adjust the view center of the map in MIX mode,

NOTE: If you are playing a game at recruit level, the map can always display the current position of enemy ships, in sensor range or not. *This only works on recruit missions!*

LOCK-ON I.D. READOUT

To the right of the **LOK** button and above the **PRJ** button is a value readout which displays the identification number of the ship or drone currently Locked-onto using **LOK**. This I.D. number will always be for a Federated Worlds ship (FO1-F99) or sensor drone (DO1-D99).

If the **MIX** button is activated, this readout will be blank to let you know that no single ship or drone's telemetry is the source of the current map display.

PRJ (J)

Immediately to the right of **MIX** and below the LOCK-ON I.D. READOUT is the **PRJ** button, which toggles the "project course" mode on and off. When **PRJ** is active, an animated "blip" is drawn moving outward from the FW ship currently Locked-onto as the telemetry source. This "blip" is used to show that vessel's current heading. The vessel whose course is being projected appears at the center of the map, and its I.D. number appears in the LOCK-ON I.D. READOUT (see above).

If **MIX** is active no projected course will be displayed, since no particular ship is the subject of a "mix" display.

IDs (I)

The button directly below **MIX** allows you to choose whether object and vessel I.D.'s are displayed on the map. It is a switch-type action button; when it is highlighted, i.d. numbers are shown.

I.D.'s are three characters long; the first character is a letter that signifies an object's type, and the other characters are a two-digit number that is unique among all units of that type in the system. I.D.'s provide useful information but take up a lot of space on the map display. You may want to turn them off when you know all of the objects and vessels in your area and want to unclutter the display.

VEC (V)

The **VEC** button to the right of **IDs** allows you to toggle the representation of vessels on the map display between vectors and simple dots. This is a switch-type action button like **IDs**; the map displays vectors when it is highlighted, and dots when it is not. When a ship is destroyed, it is signified by a small circle only when **VEC** is enabled.

The default setting for **VEC** is enabled, which lets the map display show the approximate headings of both FW and enemy ships. When ships are very close together, it can be hard to tell their vectors apart; deactivating **VEC** makes it easier to distinguish between them. (See *Reading the Map*, later in this section, for more information on vectors.)

View Radius Controls

These are along the map's right side, and their purpose is to allow you to adjust the map's "zoom" level to show varying volumes of space.

There are only three actual controls, all of which mouse users will probably have little use for (see *Mouse Map Radius Control* below).

First and foremost is the *zoom scale*, which is simply a thermometer scale the full height of the map. This scale represents no "set" range, rather, the range it represents varies depending on the source of the telemetry. In MIX mode it presents a range from 2 billion (top of the scale) to 75 (bottom) kilometers. When Locked-Onto a ship, it represents a range from that ship's sensor-maximum (top) to 75 kilometers (bottom).

Alongside the *zoom scale* is a *radius indicator*, an arrowhead type pointer which indicates where in the potential "zoom" range your view is currently set. If the arrowhead is halfway down the scale, you are currently viewing an area only half as large as potentially possible from the current telemetry source.

The *radius indicator* is actually a control, and mouse users can "drag" it up and down the scale to adjust the view radius.

Keyboard users need to use the *increase radius* (+) and *decrease radius* (-) buttons at the top and bottom of the *zoom scale*. The + button causes the *radius indicator* to move up the scale, widening the view. Likewise, the - button causes the *radius indicator* to move down the scale, shrinking the view radius. As is typical with thermometer type scales, the + and - buttons activate an "accelerating movement" routine; the longer the button is active, the faster the *radius indicator* will move (see PART III: THE CCSI/2 INTERFACE for details on Thermometer Scales and their operation).

Keyboard users must simply activate the buttons and then press any key when they wish to stop the *radius indicator's* motion. Mouse users who want to use these buttons must simply hold down the left mouse button for as long as they want the arrowhead to move.

Mouse Map Radius Control

If you are playing the game with a mouse, this is the easiest way to adjust the map radius. If you move the mouse pointer over the map itself, you'll see that a set of four "brackets" appear, framing an area of the map. As you move the mouse pointer you can adjust the size of the area framed. Clicking the left mouse button causes the map to instantly zoom in to show only the area you "framed". The VIEW RADIUS readout changes to reflect the radius of the area currently displayed. You can use this method of scaling in over and over again. The only time you can't zoom in on the map any more is when the view radius reaches 75 kilometers.

Backing "out" from a zoom involves the same technique, except that you use the *right* mouse button. When you right-click the mouse, the map changes its zoom level so that the area you were viewing when you clicked now fits inside the brackets. In effect, right-clicking does the reverse of left-clicking. Left-clicking blows up the area in the brackets to fill the map display, while right clicking shrinks the image filling the map to fit within the area defined by the brackets.

Reading the Map

The map display is fairly easy to "read" and understand. Each type of item is identified by a symbol and (with the exception of the Navpoint) always accompanied by an identification number. For instance, Federated Worlds starships are displayed as small green vector symbols (arrows) (dots if the **VEC** button is off).

Note that the NAVMAP Map Display simplifies some symbols because of its small size. The full-screen NAVIGATION panel (see below) has a larger map and therefore uses the complete symbol set. This makes the full-sized NAVIGATION panel a good choice when you want an overview of all objects in the solar system.

I.D., SYMBOL & COLOR CHART					
ITEM	I.D.	TYPES	MAP SYMBOL	SIMPLE SYMBOL	COLOR
STARS	S01-S02		starburst	yes	yellow
FIELDS	A01-A99		rectangle	no	gray
		Asteroid			
		Gamma			
		Enbranson Donnignian			
WAYPOINTS	X01-X99		dot	yes	yellow
OUTPOSTS	T01-T99	FW	dot	yes	blue
		Enemy			
		Neutral			
PLANETS	P01-P99	Habitable	circle	yes	green
		Airless			
		Gaseous			
FW SHIPS	F01-F99	normal	vector	no	green
		destroyed			
ENEMY SHIPS	E01-E99	normal	vector	no	red
		destroyed			
DRONES	D01-D99		dot	yes	pink
MINES	N01-N99		dot	yes	magenta
ESCAPE PODS	Z01-Z99		dot	yes	magenta
NAVPOINT	none		dot	no	white

The adjacent chart shows the I.D. numbers, symbols and colors used for each type of item displayed on the map.

A few notes on map symbology:

- The vector/arrows representing ships are rather simple indicators of a ship's actual heading. The vectors can point in one of eight directions, corresponding to headings of 0, 45, 90, 135, 180, 225, 270, and 315 degrees. Actual headings can be any number between 0 and 359, so the vectors represent only "approximate" headings, not actual ones.

- When a ship has been captured or destroyed, the symbol for it changes from a vector to a small circle.

- If an object is simplified on the NAVMAP display, it is represented by a dot of the same color as its full-sized symbol.

- On the combined NAVIGATION panel, planets appear as small solid disks *until* the map display zooms in tightly enough so that the planet's actual size can be accurately reflected by an octagonal outline.

- If several items are very close together on the map, sometimes the symbol or I.D. number for each may become obscured by those of other items. This can be dealt with by changing the map's scale, turning vectors and i.d.'s off, or choosing not to display certain items through use of the **SHOW** button (see above).

Furthermore, each system has a definite "border" which is exactly 2 billion kilometers out from the system center. The map displays this "border" as a solid line, and your ship cannot cross it. Built-in inhibitors prevent your ship from leaving the combat area and racing into empty interstellar space. The entire border can be seen in mix mode.

Sensor Range Limitations

Normally, the map displays the telemetry of the ship currently Locked-Onto (see **TELEMETRY**). Ships do not have infinite scanning range, and as a consequence when Locked-Onto a ship the map will display an area only as large as that ship's sensors can scan. In mix mode the map can display a view up to 2 billion kilometers in radius, but when viewing telemetry from a Destroyer equipped with the worst equipment it can carry, the view is limited to 47 million kilometers in radius, about 1/43rd (2.35%) the map's maximum view radius (equivalent to an area representing a mere 5.5% of the map area).

In mix mode sensor range limitations do not come into play insofar as the solar system components and your ships go, as you always know where they are. It is enemy forces that are the wildcard, and which are not displayed unless they happen to be within sensor range of one of your ships.

NOTE: Again, in recruit skill level games the location of all enemy ships can be determined at any time, as sensor range limits are disabled in beginner level.

NAVHLM — Navigational Helm

This quadpanel allows you to direct your ship either by autopilot or manual control, and includes hyperdrive and stealth mode as specialized helm controls. It is made up of three areas: ship's autopilot; manual helm control; and special helm controls.



The following is a breakdown of the elements of the NAVHLM quadpanel.

Autopilot

The controls on the left side of this quadpanel comprise your ship's *Autopilot*. The purpose of these controls is to allow you to pick targets and move towards them. The ten blue buttons along the left side of the quadpanel change what type of item is fed to the autopilot. The buttons on the left side of the bottom of the quadpanel engage and disengage various autopilot modes. All *Autopilot* buttons and readouts are listed below.

AUTOPILOT SELECTION BUTTONS

The autopilot selection buttons control which type of objects or vessels can be chosen as a destination by the ship's autopilot. Selecting one of these buttons compiles a list of all objects of vessels of that type, so that when the autopilot is activated, only one object or vessel from that list can be chosen as a destination. (The **NAV** (V) command is the only exception to this.) Only one of these buttons can be active at any one time. The buttons are, from left to right and top to bottom:

POD (D)	Lists all escape pods
MIN (N)	Lists all mines
FWS (F)	Lists all FW starships in the system
WAY (W)	Lists all waypoints in the system
ENS (N)	Lists all enemy ships in sensor range of FW ships (in beginner mode <i>all</i> enemy ships are listed)
PLN (P)	Lists all planets in the system
OUT (O)	Lists all outposts in the system
STR (S)	Lists all stars in the system
DRO (R)	Lists all sensor drones in the system
FLD (L)	Lists all asteroid and radiation fields in the system

CHASE [C], INTRCPT [I] and NAV [V]

These buttons activate the autopilot system on a maximum velocity course to the selected target. Only one of these three buttons can be activated at one time, and activating a different one switches the mode.

If the selection was **CHASE** or **INTRCPT**, a rolldown menu appears containing a list of the type of item selected using *Autopilot Selection Buttons*.

In **CHASE** mode, your ship will proceed at full-power until it approaches the target, and will then match velocity with it at a specified range (500,000 from starships, etc.). Chase mode is best used when pursuing moving targets, such as FW and enemy ships.

In **INTRCPT** mode, your ship will proceed at full-power until it approaches the target, and will then slow to a complete stop within a specified range of it (500 kilometers from outposts, etc.).

HELM CONTROL INDICATOR

This indicator, located just above the NAV button, has three possible modes:

small sextant	indicates navigational autopilot is in control (accessed by CHASE , INTRCPT or NAV .)
small crosshair	indicates tactical maneuvering system is in control (accessed through the TACMAN quadpanel)
nothing	indicates manual helm control is active (see HELM, below)

THE CHASE/INTERCEPT TARGET I.D.

This value display appears in the space between the **INTRCPT** and **CHASE** buttons. Its function is to list the I.D. number of the item last/currently being chased or intercepted. If the **CHASE**, **INTRCPT** or **NAV** buttons are highlighted, the value in this readout indicates the current subject being pursued.

If the HELM CONTROL INDICATOR displays a flashing crosshair/tactical symbol, the **CHASE**, **INTRCPT** and **NAV** buttons will be off but the I.D. readout will still indicate the last subject being pursued; this shows that the pursuit has been overridden by the tactical maneuvering controls. Disengaging the tactical maneuver in this case is accomplished either by using **CHASE**, **INTRCPT** or **NAV** to go after the same or a new target, activating manual helm control (see **MANUAL**, **GET** or **HALT** below), or by using the TACMAN panel's **NAV** button (see TACTICAL quadpanels for details).

If the manual helm controls (activated by **MANUAL**, **GET** and **HALT**) are used, the autopilot is disengaged and the TARGET I.D. is cleared.

Manual Helm Control

This bank of controls allows you to steer your ship, "manually" setting a course and velocity. Its function is to allow you to engage in sudden maneuvering changes in combat, or manual "steering" for exploration purposes. It consists of seven action buttons, draggable "dial" and velocity meter controls, and several value readouts.

When manual helm is activated, the HELM CONTROL INDICATOR will go black.

ACTIVATING MANUAL CONTROL

One of three buttons must be selected to activate manual helm control. These buttons will deactivate whatever other helm systems are currently active (either navigational autopilot or tactical maneuvering), and alter your ship's course if appropriate. The button you select chooses what course the helm will initially follow.

MANUAL (H)

This action button activates manual helm control, making your ship take up the course and velocity set using the Heading Dial and the Velocity Meter (see below). If the AUTOPILOT or TACMAN controls are active (noted by the flashing HELM CONTROL INDICATOR), **MANUAL** shuts them off and takes control.

Once manual control is active, you can manually change course or velocity at any time by adjusting the Heading Dial and Velocity Meter. You do not need to press **MANUAL** again.

HALT (H)

This button is of the trigger type, and causes your ship to execute a full-power (retro-thrust) braking maneuver and come to a complete stop (relative to the current solar system). Activating **HALT** automatically switches on manual helm control and sets the Velocity Meter to 000. After activating **HALT** you can adjust course and velocity at will. **HALT** overrides all chase, intercept, manual helm and tactical maneuvering controls.

GET (G)

This button is a trigger type action button, and its function is to copy the current navigation settings into the HELM box and switch to manual helm control. The heading and velocity of your ship at the moment you trigger **GET** are copied to the heading dial and velocity meter, regardless of whether navigational control is under autopilot (chase, intercept or nav) or tactical control.

See PART II: TACTICS in the TRAINING MANUAL for examples of using this control in a mission.

STEERING THE SHIP

When **MANUAL**, **GET** or **HALT** have been activated, the manual helm controls are engaged and directly control the ship's movement systems. Any course and velocity set with the Heading Dial and Velocity Meter is immediately engaged by your ship.

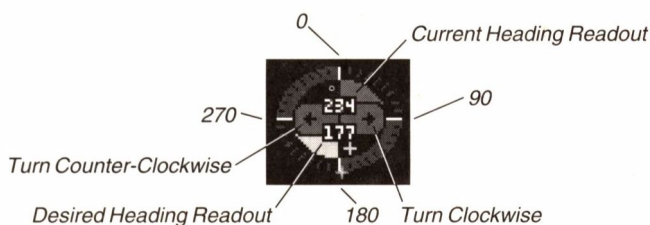
OPERATIONAL OVERVIEW: To utilize manual control you must set course and velocity using the Heading Dial and Velocity meter and make sure that the HELM CONTROL INDICATOR is black. Using the chase, intercept or nav autopilot options, or the tactical maneuvering controls, turns manual helm control off.

A.N.D.I. NOTE: If your system is configured correctly and you have A.N.D.I. activated, A.N.D.I. will affirm all manual heading a velocity settings *audibly*, with messages like, "Affirmative: zero one six" or "Velocity: three eight four."

THE HEADING DIAL

This dial represents a heading in degrees, set relative to the "plane of the ecliptic" of the current solar system (if any). Headings can

be from 000 to 359 degrees, allowing your ship to move in any direction on the map. Heading 000 is due "north" on the dial and map, heading 090 is due "east", 180 is due "south", and 270 is due "west".



The following is a breakdown of the elements of the Heading Dial.

Current Heading Readout

This displays the current heading of your ship. The value in this readout changes to reflect your ship's course changes. The *Current Heading Readout* is not specifically linked to the manual helm controls, and reflects the ship's heading whether navigation is under autopilot, manual, or tactical control.

Desired Heading Readout

This displays the desired heading you want your ship to take when under manual helm control. The value displayed here is determined by the position of the *Desired Heading Cursor* (see next item) on the outside of the Dial. When you set a new desired heading this readout will change instantly to reflect it. If manual helm control is activated, the *Current Heading Readout* (see above) will begin to change to match the desired heading as your ship takes up the new course.

Desired Heading Cursor

This operates much like the arrowhead pointer on a standard "thermometer scale" (see PART III: THE CCSI2 INTERFACE), except that rather than going from one end of a straight scale to another, this pointer circles a dial — encountering no start and end points. The position of the cursor on the outside of the dial indicates your desired heading in degrees. The actual numerical value of the heading is displayed in the *Desired Heading Readout* (see above).

There are two ways to change the desired heading: dragging the pointer, or using the *Turn Clockwise* and *Turn Counter-Clockwise* controls (see below).

To drag the pointer you must have a mouse. Click the left mouse button on the pointer, and, while holding the button down, "drag" the pointer around the dial to the desired position. As you move the pointer, the *Desired Heading Readout* will change to reflect the new setting. When you release the mouse button, the pointer will stay where you left it.

Turn Clockwise

This function is activated by the ➡ button, and its purpose is to move the *Desired Heading Cursor* around the Heading Dial in a clockwise direction. When you activate the ➡ button by clicking on it with the mouse, it stays "on" only as long as you hold the mouse button down. If using the keyboard, the button stays "on" and the pointer moves clockwise until you press another key.

Turn Counter-Clockwise

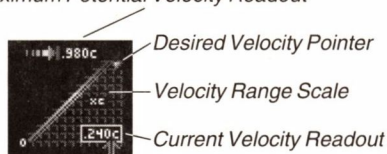
This function is activated by the ⬅ button, and its purpose is to move the *Desired Heading Cursor* around the Heading Dial in a counter-clockwise direction. When you activate the ⬅ button by clicking on it with the mouse, it stays "on" only as long as you hold the mouse button down. If using the keyboard, the button stays "on" and the pointer moves counter-clockwise until you press another key.

NOTE: If the Velocity Meter (see below) is set to .000c your ship will not be moving and your new Desired Heading setting won't make any difference.

VELOCITY METER

This portion of the manual helm controls is where you can adjust your ship's velocity. There are a number of items associated with the Velocity Meter.

Maximum Potential Velocity Readout



VELOCITY NOTE: All velocities in **Rules**

of Engagement 2 are presented as metric values on a scale where the number 1 equals the speed of light (*c*). Thus, a velocity of .75 equals 75% of lightspeed.

Maximum Potential Velocity Readout

The symbol here is an arrow pointing at a "stop" line, which indicates that the number to the right of the symbol is your ship's *maximum* potential velocity. The maximum velocity is determined by the type of engines your ship carries. Smaller ships are limited in the size and power of engine types they can be equipped with.

This readout always represents the maximum velocity at which your ship could travel if the drive systems were *undamaged*. If the drive has sustained damage, you will not be able to reach this maximum until the drive is repaired.

Velocity Range Scale

This is an "angled" version of a "thermometer" scale (see PART III: THE CCSI2 INTERFACE). It represents the potential velocity range of your vessel, going from "halted" at the bottom left, to your vessel's top velocity at the upper-right (the numeric value is displayed in the *Maximum Potential Velocity Readout* to the left). The position of the *Desired Velocity Pointer* (see next item) on this scale indicates the manual helm control velocity.

Desired Velocity Pointer

This pointer is similar to pointers on standard "thermometer" scales (see Part III: THE CCSI2 INTERFACE). Its position along the *Velocity Range Scale* determines the desired velocity you want your ship to use when under manual helm control. The exact velocity indicated by the pointer is displayed by the *Desired Velocity Readout* (see below).

There are two ways to change the desired velocity; dragging the pointer up and down the scale using a mouse, or using the *Increase* and *Decrease Velocity* buttons (see below).

To drag the pointer you must have a compatible a mouse. Click the left mouse button on the pointer, and, while holding the button down, “drag” the pointer up and down the scale to the desired position. When you release the mouse button, the pointer will stay where you left it and, if manual helm control is active, your ship will immediately begin making velocity adjustments. If in manual mode, you can see the velocity change happening by watching the *Current Velocity Readout* [see below].

Increase Velocity Button

This function is activated by the + [plus] button, and its purpose is to move the *Desired Velocity Pointer* up the *Velocity Range Scale* and increase the value in the *Desired Velocity Readout* (see below). When you activate the + button by clicking on it with the mouse, it stays “on” only as long as you hold the mouse button down. If using the keyboard, the button stays “on” and the pointer attempts to move up the meter until you press another key.

Decrease Velocity Button

This function is activated by the - (minus) button, and its purpose is to move the *Desired Velocity Pointer* down the *Velocity Range Scale* and decrease the value in the *Desired Velocity Readout* (see next item). When you activate the - button by clicking on it with the mouse, it stays “on” only as long as you hold the mouse button down. If using the keyboard, the button stays “on” and the pointer attempts to move down the meter until you press another key.

Desired Velocity Readout

This readout, located between the *Decrease Velocity* and *Increase Velocity Buttons* and below the *Current Velocity Readout* [see next item] shows the exact velocity selected on the *Desired Velocity Meter* by the *Desired Velocity Pointer*. Like that pointer, this represents the desired velocity you want your ship to use when under manual helm control.

Current Velocity Readout

This readout, appearing in a frame below the *Desired Velocity Meter*, shows a continuously updated readout of your ship’s current velocity. Under manual control or in intercept mode, the value will level off at a particular number; under manual helm control the particular number will be as close to the *Desired Velocity Readout* as your ship’s engines will allow. In chase or tactical maneuvering modes, the value will fluctuate as your ship automatically adjusts its position relative to targets.

Special Helm Controls

Two buttons on this quadpanel engage helm controls that are only used in special situations, or are not available on all vessels:

HYPER (Y)

Located at the bottom center of the quadpanel, this button engages your ship's hyperdrive, which will hurl your ship into hyperspace, removing it from the map and effectively ends the current mission. The hyperdrive takes time to fully engage; the length of this delay time depends on which **Drive System** is installed in your ship. When the **HYPER** button is pressed, the HYPERDRIVE COUNTDOWN readout (see next item) indicates the seconds remaining before the hyperdrive fully engages and the ship leaves the system.

If you engage hyperdrive after completing all mission goals, the game will credit you with a mission success. If you have not completed all the goals, using the hyperdrive aborts the mission and credits you with a loss.

Hyperjumping is sometimes the only way to save your ship. If your ship is severely damaged and under attack, sometime going into hyperspace is the only way to avoid destruction and loss of a useful craft. If you hyperjump leaving any operational FW ships in the system, those ships will be considered lost. The hyperdrive will not operate if your drive system has been destroyed.

HYPERDRIVE COUNTDOWN READOUT

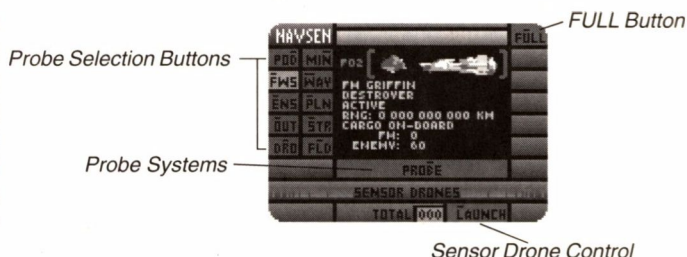
To the left of the **HYPER** button, the readout framed in red counts down the seconds left until your hyperdrive fully engages.

STEALTH (A)

In the bottom-right corner of this quadpanel, Scout class ships whose **COMSEN** have stealth capability will have a functioning **STEALTH** button; other ship classes and Scouts without stealth capability will have a green, non-functioning button. The button activates stealth mode, a form of "silent running" which makes it extremely difficult for other ships to see you. The disadvantage is that you are unable to fire weapons while in stealth mode.

NAVSEN — Navigational Sensors

The controls on this quadpanel allow you to gather information on objects and vessels by scanning/probing them, and to launch sensor drones to extend your telemetry sources through the solar system.



The panel has three components: the PROBE SELECTION BUTTONS; the PROBE SYSTEMS; and SENSOR DRONE CONTROLS.

The following is a breakdown of the elements of the NAVSEN quadpanel.

Probe Selection Buttons

The bank of ten selection buttons on the left side of the quadpanel controls which type of objects or vessels can be scanned by your probe systems. Selecting one of these buttons compiles a list of all objects or vessels of that type, so that when the **PROBE** button is pressed, only an object or vessel from that list can be chosen for scanning. Only one of these buttons can be active at any one time. The buttons are, from left to right and top to bottom:

POD (D)	Lists all escape pods
MIN (N)	Lists all mines
FWS (F)	Lists all FW starships in the system
WAY (W)	Lists all waypoints in the system
ENS (N)	Lists all enemy ships in sensor range of FW ships (in beginner mode <i>all</i> enemy ships are listed)
PLN (P)	Lists all planets in the system
OUT (O)	Lists all outposts in the system
STR (S)	Lists all stars in the system
DRO (R)	Lists all sensor drones in the system
FLD (L)	Lists all asteroid and radiation fields in the system

Probe Systems

Your ship's probe systems are handled through two controls; a data screen and the **PROBE** (B) button. Activating **PROBE** summons a rolldown menu which lists the objects or vessels of the type set by the PROBE SELECTION BUTTONS, from which you can select one item to scan. The ship's **COMSEN** system will scan the item specified, then display the information it gathers on the datascreen at the center of the quadpanel.

When you probe each of the following vessel/object types, the indicated information is displayed:

ESCAPE PODS	Captain, Range, Survivors
MINES	Fuse, Range
FW SHIPS	Name, Class, Range, Status, Cargo
WAYPOINTS	Range, Cargo
ENEMY SHIPS	Name, Class, Range, Status, Cargo
PLANETS	Name, Type, Radius, Range, Cargo
OUTPOSTS	Name, Affiliation, Classification, Status, Location (planet or space), Range, Cargo, Sophistication (repair and supply)
STARS	Name, Type, Class, Radius, Range
DRONES	Range
FIELDS	Density or Strength, Size

In order to determine the cargo held aboard an enemy vessel or an outpost, you must be within 10% of the scanning range of your COMSEN system (see APPENDIX III: THE FW FLEET to determine the scanning range of your COMSEN system). This is reflected by the probe's data screen, and on the DRPCGO quadpanel (see the section on DOCKING/REPAIR PANELS).

Sensor Drone Controls

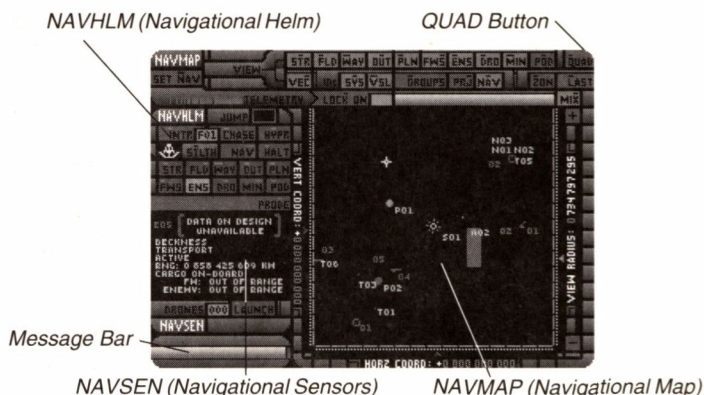
If your ship has the capability to carry sensor drones and has at least one drone stored, the **LAUNCH** (L) button at the bottom of the quadpanel allows you deploy one at your current location. Drones provide telemetry sources that can be fed into your navigational map; each one allows you to watch an area of the system for enemy vessels without keeping a starship there. A sensor drone has a telemetry-gathering range of 29 million kilometers.

DRONE SUPPLY READOUT

The readout to the left of the **LAUNCH** button displays the number of drones left aboard your ship. When it reaches zero, you have no more drones to launch. Drones *cannot* be resupplied at outposts.

THE COMBINED NAVIGATION PANEL (FULNAV)

The panel accessed that is accessed by pressing the **FULL** (U) button on any of the Navigation quadpanels has separate areas that duplicate functions of the NAVMAP, NAVHLM and NAVSEN quadpanels. These areas are titled on the panel, and are indicated below:



KEYBOARD NOTE: The overscores on buttons for the NAVHLM and NAVSEN sections of this panel appear gray. This signifies that you must hold down the shift key when pressing the keyboard equivalent for these buttons.

Pressing the **QUAD** (Q) button, located in the top-right corner of the panel, will replace the quadpanels and the Master Control Bar to their original locations. You can also return them to their original places by accessing a new quadpanel from the Master Control Bar.

The following will explain how each quadpanel is modified to fit on the combined panel:

NAVMAP Modifications

The map display on the combined NAVIGATION panel is much larger than that of the NAVMAP quadpanel, allowing you to view the solar system at a higher resolution. This panel should therefore be viewed as a **supplement** to NAVMAP.

Several new features have been added to the larger map:

- The **SHOW** button has been replaced by a row of *Map Selection Buttons*, one for each object/vessel type that can be shown. (Due to space limitations, the **NAV** button is located on the row just below this one. The buttons (and their associated keys) are: **STR** (T), **FLD** (F), **WAY** (W), **OUT** (U), **PLN** (P), **FWS** (S), **ENS** (E), **DRO** (D), **MIN** (M), **POD** (O), and **NAV** (A).

- The **ID**s function has been split into two buttons: **SYS** (Y) toggles on and off the I.D.'s for all objects in the solar system/map, which includes everything but vessels; and **VSL** (V) toggles on and off I.D.'s for vessels.

- The **GROUPS** (G) button, located to the right of **SYS** and **VSL**, adds a new *View Selection Button* to the panel. This toggles the viewing of Battle Groups on the map display. Battle Groups are two or more FWAf ships operating as a combat unit, so that an order given to the Battle Group Leader is relayed

to all ships within the group. (Whether the order is followed by all concerned depends on the personalities of the captains involved.) When **GROUPS** is active, the map display will display *only* the symbol for the Battle Group Leader's ship. *It does not represent the heading and location of all ships in that battle group!*

The **ZON** (Z) button, located to the left of **LAST**, changes the map display's magnification to 500,000 kilometers, which is the considered the standard combat zone for starships. Naturally this command is only useful if the display is locked-onto a starship; this allows you to judge which targets are within range of the ship's missiles (EBWs have a range of approximately 3 million kilometers).

Horizontal and Vertical Coordinate Scales have been added to the left and bottom edges of the map display. These scales represents the entire "width" and "height" of the solar system map, from -2 billion to +2 billion. The mark at the middle of either scale represents coordinate 0, the center of the system on that axis. The arrowhead pointers which appear alongside each of these scales shows you where the current centered object is within the system. The specific coordinate the arrowheads point to are listed as the **HORZ COORD:** and **VERT COORD:** readouts.

NOTE: These Coordinate Scales are readouts only, and you cannot manually adjust the map center. Remember, the view center is always either a ship (Lock-On mode) or the map center (mix mode).

Once you learn how the coordinate system works, such as that a + horizontal coordinate is to the right of system center and a - vertical coordinate is below the system center (on the map), then you can tell where a given ship is simply by Locking-onto it and checking its coordinates. For example, a ship with a horizontal coordinate of -2,000,000 (-2 million) and a vertical coordinate of 1,500,500,000 (1 billion, 500 million) would be just left of the system's center and 75% of the way towards the "north" end of the map from the center.

NAVHLM Modifications

Manual helm control is not included here; only autopilot controls and the **HALT** button are present. Additionally, the *Autopilot Selection Buttons* have been combined with NAVSEN's *Autopilot Selection Buttons*, so that the object/vessel type selected to chase or intercept is also the one that will be used by the **PROBE** command.

NAVSEN Modifications

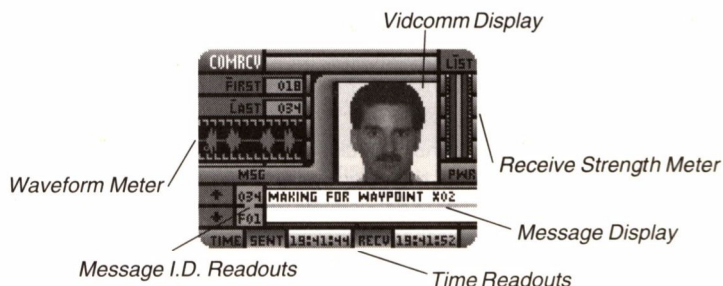
All features of the NAVSEN are present on the combined panel, with no changes. However, the *Probe Selection Buttons* have been combined with the *Autopilot Selection Buttons*, so that the object/vessel type selected to probe will also be the one selected by the **CHASE** or **INTRCPT** buttons.

COMMUNICATIONS PANELS

These panels are the very heart of your fleet operations. They are from where you dispatch orders to and receive reports from the captains under your command. Each of the three quadpanels controls a different aspect of communications: receiving messages (COMRCV), sending messages (COMXMT), and power and signal strength (COMPWR).

COMRCV — Receive Communications

This quadpanel's only role is to communicate incoming messages, both as they occur and afterwards. It functions in two modes: *Visual Mode*, which shows a variety of information on only one message at a time; and *List Mode*, which displays the text and I.D.'s of up to five messages at once.



Quick Operational Overview — To view an incoming message, activate this quadpanel from the Master Control Bar; it will appear in whichever mode was last activated. The panel will automatically select the last message received as the current one; use the **↑** and **↓** buttons to select others.

If you want to see the face of the message's sender or the strength of the message signal, use *Visual Mode*. If you want to review your message list, choose the *List Mode*. The button in the top-right corner of the quadpanel switches modes; it is named **LIST** (L) when in *Visual Mode*, and **VID** (V) when in *List Mode*.

Descriptions of the this panel's two modes follow, indicating what information is displayed in either case. The buttons that control in either mode are identical; they are explained after these descriptions.

Visual Mode

This is the default mode for this quadpanel, and the one you will see the first time you activate it. It consists of six elements that give information on only one message at a time (referred to herein as "the current message"):

Waveform Scope

The small black rectangle on the left side of the quadpanel displays the waveform of the current message. Each message has its own, unique waveform; and the amplitude of the waveform, measured by the average length of its green lines, is a general sign of the strength of the current message at the time of reception.

Vidcomm Display

The small screen on the right side of the quadpanel shows a visual image of the sender of the current message. This can be used to distinguish between different FW ship captains, and between different alien races.

Reception Strength Meter

The vertical meter to the right of the *Visual Display* measures the strength of the current message's signal at the time it was received. This strength can be diminished by distance from the sender, or by activating your jamming systems. This meter works identically to the *Signal Scales* on the COMPWR panel; the yellow line in the center indicates the current message's signal strength.

Message Display

Near the bottom of the quadpanel are two lines that display the actual "message" part of the current message. Messages are usually only one line long, but longer ones will use both lines of the display.

Whenever you call up this quadpanel in *Visual Mode*, or if you receive a message while already viewing the latest message, the list is automatically set to the end so that you can immediately see the last message received in the *Message Display*.

Message I.D. Readouts

The two, linked tan boxes are readouts that identify the number and source of the current message. The top readout shows the I.D. number of current message; this number is based on the order in which messages were received; message 000 is the first one received, message 001 is the second, and so on. The bottom readout contains the I.D. of the ship or outpost that sent the current message; these use the standard I.D. system for vessels and outposts.

Time Readouts

The two readouts at the bottom of the quadpanel show the times at which the current message was transmitted by the sender and received by you. Remember that messages may be received in a different order than they were transmitted; a message recently received from a very distant ship would have been sent earlier than a previously received message sent from a nearby ship.

List Mode

This mode provides an alternative to Visual mode, showing up to five messages at a time. Its features are broken down below.

Current Message Display

The two-line display in the middle of the screen works identically to the *Message Display* from Visual mode. The only difference is that it is now flanked from above and below by later and earlier messages in the message list.

Whenever you call up this quadpanel in *List Mode*, or if you receive a message while already accessing it, the list is automatically set to the end so that you can immediately see the last message received in the *Current Message Display*.

Current Message I.D. Readouts

The two, linked, tan boxes to the left of the *Current Message Display* work identically to the *Message I.D. Readouts* from Visual mode. It shows the I.D. number of the current message and the I.D. of its sender.

Current Message Time Readouts

The readouts at the bottom of the screen work identically to the *Time Readouts* from Visual mode. They show the times at which the current message was transmitted by the sender and received by you.

Later Message Displays and I.D. Readouts

The two lines above the *Current Message Display* show information on the earliest two messages that were received after the current message, if there are any. There is only room for one line of each message; if the message runs longer it is marked with an ellipsis (. . .).



The two tan boxes to the left of each line function identically to the *Current Message I.D. Readouts*. They show the I.D. number of each message, and the I.D. of the sender of each message.

Earlier Message Displays and I.D. Readouts

The two lines below the *Current Message Display* show information on the most recent two messages that were sent before the current message, if there are any. These displays and readouts work identically to the *Later Message Displays and I.D. Readouts* (see previous entry).

In either mode, there are four buttons that control the panel.

Message Select Buttons

The  and  buttons allow you to move through the message list. In **VID** mode, they select which message appears on the panel. In **LIST** mode, they select which message appears at the center of the display.

FIRST (F) / LAST (L)

These buttons select the first unread message in the list, and the most recent message in the list, respectively. If there are no unread messages waiting, these buttons will not function.

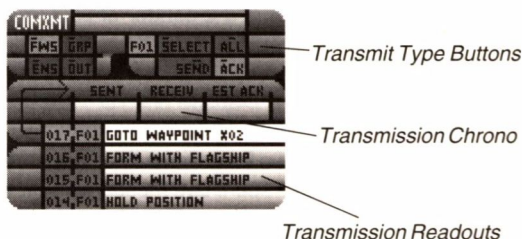
Unread Message Readouts

These readouts, located to the right of each of the **FIRST** and **LAST** buttons, indicate the message numbers of the first unread message in the list, and the most recent unread message in the list, respectively. If there are no unread messages waiting, both readouts will be blank.

Finally, the button in the top-right corner switches the quadpanel between two modes, and changes its name to reflect its role: when in visual mode, **LIST (I)** activates list mode; and when in list mode, **VID (V)** activates visual mode.

COMXMT — Transmit Communications

The purpose of this quadpanel is to dispatch orders to vessels and outposts. Orders are chosen from rolldown menu lists that are appropriate to who will be receiving them (e.g. one order on the list for FW ships is "Capture enemy ship"); and specific details for an order (e.g. which ship should be captured) are requested by the quadpanel at the time of transmission.



Quick Operational Overview — Choose the type of target that will receive your order using the *Receive Type Buttons* (i.e. — **FWS**), then do one of the following: Click on **SELECT** (S) to choose one recipient from the rolldown list that appears; *or* right-click on **SELECT** (Shift-S) to choose multiple recipients; *or* press **ALL** to select all vessels or objects of the chosen type. Highlight **ACK** (A) prior to sending a message if you are sending to FW ships and would like their captains to acknowledge your orders.

Press **SEND** (N) to send an order; select one choice from the rolldown menu that appears. The menu has multiple pages, so there are more options here than are visible. If the message requires more information (like a vessel to be attacked), choose it from the second rolldown menu that appears. The message will then appear at the top of the *Transmission List*.

The following is a breakdown of the elements of the COMXMT quadpanel.

Receive Type Buttons

Four blue buttons, arranged in a rectangle in the top-left corner of the panel, allow you to choose the type of vessel or object that will receive your next transmission. This does not select which specific target will receive the message, but compiles a list of objects of the chosen type to be used by the **SELECT** button.

The four choices are:

FWS (F)	Choose from any FW ships in the system.
GRP (G)	Choose from any FW Battle Groups that formed by your orders. A message sent to a group will be transmitted to the Group Captain, who will use his/her/its group to carry out the order.
ENS (E)	Choose from any known enemy ships in the system.
OUT (O)	Choose from any outposts, including friendly, hostile and neutral, in the system.

Only one of these buttons may be highlighted at a time.

SELECT (S)

This button, located near the *Message Bar* at the top of the screen, selects one or more ships, groups or outposts as determined by your selection of the *Receive Type Buttons*. The selected target or targets will receive any messages you transmit, until you use **SELECT** again.

SELECT works in two ways. If you left-click on it, a rolldown of action buttons appears, and you can choose only one target from the list. If you right-click on it (Shift-S), a rolldown of selection buttons appears, you can choose multiple targets from the list by highlighting each of them and pressing **DONE (D)** when finished. If you right-click on **SELECT** again, those targets will still be highlighted so that you may use them repeatedly. The *Receiver Readout* (see below) will indicate the specific target if only one is chosen, or will indicate that more than one target is chosen by displaying "???" (i.e.- F??).

Selecting all targets of the chosen type can be done here, but is more efficiently handled by the **ALL (L)** button (see next item).

ALL (L)

This button, located to the right of **SELECT**, directs all outgoing messages to every ship, group or outpost of the type selected. The *Receiver Readout* (see next item) will indicate that ALL was selected by displaying "XX" (i.e.- FXX).

Receiver Readout

The tan box to the left of **SELECT** indicates which target or targets have been selected to be sent orders. Targets are identified using the standard I.D. system. However, the two-digit number at the end of the I.D. will change under two circumstances: "???" indicates that targets were chosen by right-clicking on **SELECT**, and "XX" indicates that all targets of the chosen type was selected by pressing **ALL**.

ACK (A)

This is a selection button which lets you set whether or not you wish an "acknowledge order" flag to be transmitted with each message sent to an FWAf ship. If **ACK** is off, Captains may or may not send messages when they carry out orders. If it is on, you are telling them that you want them to acknowledge your orders and report on the status of their action as they carry those orders out. As always, some Captains may not respond to this. This button has no effect on messages sent to non-FW ships or outposts.

SEND (N)

Located to the left of **ACK**, this button allows you to select an order from a rolldown menu, and transmits it to the target or targets chosen with the *Receive Type Buttons* and **SELECT**.

When you press **SEND**, a rolldown menu will appear with a list of orders from the FWAFF Message Database; there are different lists for the different types of ships and outposts you can send to; these are detailed below (see the section titled **Orders**). The appropriate list will be chosen for you; select the message you want from it and the menu will disappear.

Some orders will require you to give one additional piece of information to clarify them; most of the time this is a destination or target. In these cases, a second rolldown menu will appear with a list of every possible relevant selection. Select one response and the rolldown menu will disappear.

Once these steps are completed, the order will be transmitted. Information about this message (the most recent one) will be displayed in the *Transmission List* and *Transmission Chrono* (see next entries).

Transmission List and Transmission Readouts

The four rows at the bottom of the quadpanel list the four most recent messages transmitted by your ship. The messages are ordered so that the most recent message is at the top of the list, and earlier messages proceed downwards. The first line of each transmission is shown, and an ellipsis (...) is used to mark if the message continues past that line.

Two boxes, located to the left of each of the four spaces in the list, are *Transmission Readouts* that display vital information about the messages in each space. The first (leftmost) box lists the transmission's I.D. number. Transmissions are numbered in the order they are sent: the first sent is transmission 000, the second is 001 and so forth. The second box displays who the transmission was sent to; it contains the same I.D. that was shown in the *Receiving Readout* at the time the message was sent.

Transmission Chrono

There are three time readouts displayed above the top row of the *Transmission List*; an arrow connects it to the most recent transmission in the list. Any time you send a message to a *single* ship the readouts here are updated to tell you:

SENT	The time when you transmitted the last order.
RECEIV	The estimated time when the selected ship or outpost will receive the last transmitted order.
EST ACK	The earliest time you could possibly expect an acknowledgment message to the last transmitted order (assuming the ACK button is highlighted — see above).

These readouts are filled with question marks whenever you send a message to more than one target, since each target would have its own RECEIV and EST ACK time.

Orders

The following is a listing of all orders available on the COMMUNICATIONS panel. The first 47 are for Federated Worlds ships and groups. (FW ships and groups share the same database list, so familiarity with one allows familiarity with the other; however, messages like "FORM BATTLE GROUP" are of little use to existing groups.) Six messages may be sent to enemy vessels, and two additional messages may be sent to outposts. As always, the personalities of the Captains, enemies and outpost personnel involved will determine whether or not they will follow the orders you send.

MANEUVER AT WILL

Instructs Captain of the FW vessels(s) in question to do whatever they think is appropriate. As this is an essential "blank check" order, you should carefully review the dockets of any Captains *before* sending this order (dockets are available on the DATDKT quadpanel).

HOLD POSITION

Instructs the Captain of the vessel(s) in question to come to an immediate stop and take no action without further orders.

FORM WITH FLAGSHIP

Instructs the Captain of the vessel(s) in question to follow the flagship (your ship) wherever it goes. This order merely instructs the ships to follow you, and the Captains of those vessels may or may not engage in the actions your ship undertakes.

RESUPPLY AT OUTPOST

Instructs the Captain of the vessel(s) in question to proceed to and resupply at the Outpost selected. If the outpost is under FW control, the ship will have no trouble getting supplies and repairs. If it is a neutral outpost, the Captain's diplomacy is needed to negotiate for supplies, etc. If you order a Captain to resupply at an *enemy* Outpost, he/she will have to capture it first, and therefore it is the same order as CAPTURE OUTPOST when the subject is held by the enemy. (The allegiance of any Outpost can be determined by probing it from NAVSEN.)

CAPTURE OUTPOST

Instructs the Captain of the vessel(s) in question to proceed to, attack, and then attempt to board and capture the Outpost selected. Both enemy and neutral outposts can be captured, though it's easier to first try asking (RESUPPLY AT OUTPOST) a neutral Outpost before using hostilities. If the outpost is FW, there is no reason to attempt to capture it. (The allegiance of any Outpost can be determined by probing it from NAVSEN.)

Enemy ships can capture Outposts as well, so you may find yourself having to order one of your ships to retake a former FW Outpost seized by the enemy.

DESTROY OUTPOST

Instructs the Captain of the vessel(s) in question to proceed to, attack, and then attempt to destroy the Outpost selected. Sometimes the mission objectives and time limit will make it preferable to destroy an enemy outpost instead of capturing it.

CAPTURE ENEMY SHIP

Instructs the Captain of the vessel(s) in question to intercept, attack, and then attempt to board and capture the enemy ship selected.

DESTROY ENEMY SHIP

Instructs the Captain of the vessel(s) in question to intercept, attack, and then attempt to destroy the enemy ship selected.

PROCEED TO WAYPOINT

Instructs the Captain of the vessel(s) in question to proceed to the Waypoint selected.

PATROL OUTPOSTS

Instructs the Captain of the vessel(s) in question to move from Outpost to Outpost (if any) on the map, much like a guard or sentry.

PATROL PLANETS

Instructs the Captain of the vessel(s) in question move from planet to planet (if any) on the map. Used to initiate a "search pattern" or sentry action by the selected ships.

REPORT STATUS

This order is similar to the **ALL REP STAT** button on the DATFLT quadpanel (see **DATA RETRIEVAL PANELS**), but instructs *only* the selected ship to send a *single* update message. As with **ALL REP STAT**, the report goes not to the Communications panel, but to DATFLT.

FORM BATTLE GROUP

Instructs the Captain of the vessel in question to form a Battle Group and take charge as the Group Leader. All ships instructed to join that Battle Group then come under the immediate command of the Group Leader's Captain. This gives a great deal of authority to the Captain in question, so make sure you've picked the right Captain for the job.

JOIN BATTLE GROUP

Instructs the Captain of the vessel(s) in question to intercept, follow, and otherwise follow the orders of the Captain of the ship designated the Group Leader of the selected Battle Group. Battle Groups are always identified by an I.D. starting with G, as in G01 or G12.

DISBAND FROM BATTLE GROUP

Instructs the Captain of the vessel(s) in question to disengage from the selected Battle Group, and to no longer follow the orders of the Captain of that Group.

ACTIVATE SELF-DESTRUCT

Instructs the Captain of the vessel(s) in question to proceed to immediately arm and initiate the DESTRUCT function on their vessel. If the Captain obeys, 15 seconds after

receiving the order, the ship(s) in question will explode. Make sure your own, or any other FW ships or enemy targets to be captured, are *not* in the vicinity. Any vessel within the "primary radius" of a self-destructing starship primary power system (PPS) will be instantly destroyed, and those under the "blast radius" risk severe damage or destruction.

SURRENDER TO ENEMY SHIP

Instructs the Captain of the vessel(s) in question to surrender to the enemy ship currently selected. Since your score and performance is ranked depending on many factors, including FW casualties, in many cases it's better to instruct a doomed ship to surrender rather than be destroyed, for at least the crew then has a chance for survival. Of course, whether or not the enemy accepts the surrender is an entirely different matter.

PICKUP FW CARGO AT OUTPOST

Instructs the Captain of the vessel(s) in question to intercept and pickup FW cargo from the selected outpost. If the outpost is hostile, it will first be captured.

PICKUP FW CARGO AT WAYPOINT

Instructs the Captain of the vessel(s) in question to proceed to and pickup cargo from the selected waypoint.

PICKUP FW CARGO AT PLANET

Instructs the Captain of the vessel(s) in question to proceed to and pickup cargo from the selected planet.

DELIVER FW CARGO TO OUTPOST

Instructs the Captain of the vessel(s) in question to intercept and deliver FW cargo to the selected outpost.

DELIVER FW CARGO TO WAYPOINT

Instructs the Captain of the vessel(s) in question to proceed to and deliver FW cargo to the selected waypoint.

DELIVER FW CARGO TO PLANET

Instructs the Captain of the vessel(s) in question to proceed to and deliver FW cargo to the selected planet.

CAPTURE CARGO FROM SHIP

Instructs the Captain of the vessel(s) in question to intercept, attack and then transport cargo off the selected enemy ship.

CAPTURE CARGO FROM OUTPOST

Instructs the Captain of the vessel(s) in question to intercept, attack and then transport cargo from the selected outpost.

CONCENTRATE FIRE ON SYSTEM

Instructs the Captain of the vessel(s) in question to concentrate its fire on the specified system of the current target, such as shields. In this way, you can coordinate attacks.

For example, if one of your ships is assisting you in attacking an enemy vessel, and you are targeting its drives, you may instruct another ship to concentrate their fire on the ship's shields, which will make it more vulnerable to your attacks. If the target is not currently engaged with or in pursuit of an enemy, this message will do nothing (other than confuse the receiving captain). If the target is an outpost, this order will be ignored.

PROTECT OUTPOST

Instructs the Captain of the vessel(s) in question to intercept and then guard the selected outpost. The Captain will be obliged to attack any enemy ships that approach the outpost, but whether or not the Captain actually engages them depends on his personality.

DISABLE ENEMY SHIP

Instructs the Captain of the vessel(s) in question to intercept, attack, and attempt to disable the selected enemy ship's drive, communications, and weapons systems. This is similar to DESTROY ENEMY SHIP, but leaves the ship intact; and similar to CAPTURE ENEMY SHIP, but does not oblige the Captain to spend time trying to take over the enemy vessel. If this order is successfully carried out, the selected enemy target will be left crippled and effectively out of the battle until or if it can be repaired.

DISABLE FW SHIP

Instructs the Captain of the vessel(s) in question to intercept, attack, and attempt to disable the selected FW ship's drive, communications, and weapons systems. This can be used to immobilize Captains that do not respond to orders with a minimum of cost in crew and systems.

INTERCEPT ENEMY SHIP

Instructs the Captain of the vessel(s) in question to intercept the selected enemy ship and await further orders.

INTERCEPT FW SHIP

Instructs the Captain of the vessel(s) in question to intercept the selected FW ship and await further orders.

SHADOW ENEMY SHIP

Instructs the Captain of the vessel(s) in question to intercept the selected enemy ship and then shadow it, maintaining a relative distance and bearing (angle relative to the enemy's ship's bow).

SHADOW FW SHIP

Instructs the Captain of the vessel(s) in question to intercept the selected FW ship and then shadow it, maintaining a relative distance and bearing (angle relative to the FW ship's bow).

CEASE FIRE

Instructs the Captain of the vessel(s) in question to break off its current attack. Some aggressive and unruly Captains may be lax in heeding this command.

ESCORT FW SHIP

Instructs the Captain of the vessel(s) in question to intercept the selected FW ship and follow it, attacking any enemy ships that approach. Whether or not the Captain attacks depends on his, or its personality, naturally.

PRIORITIZE REPAIRS

Instructs the Captain of the vessel(s) in question to set his repair priorities to those selected. The available priorities consist of the three most important systems to be repaired, and the order in which they should be repaired.

MIMIC FW SHIP

Instructs the Captain of the vessel(s) in question to do what the selected FW ship does. This will test the personality of the Captain involved by forcing him/her to duplicate every action that the selected ship undertakes.

TOW FW SHIP TO NAVPOINT

Instructs the Captain of the vessel(s) in question to intercept the selected FW ship, and then tow him to the current Navpoint. By careful use of the **SET NAV** button on NAVMAP, this can bring crippled ships within docking range of an outpost for repairs.

SET COURSE FOR NAVPOINT

Instructs the Captain of the vessel(s) in question to intercept the current Navpoint. Use of the **SET NAV** button on NAVMAP can bring any ship in the fleet to any point in the solar system.

PLACE DRONE AT NAVPOINT

Instructs the Captain of the vessel(s) in question to intercept the current Navpoint and place a sensor drone there. The drone will transmit telemetry to all ships in the fleet. Only some ships carry sensor drones (see APPENDIX III: THE FW FLEET for a list of ships and parts to make this determination).

PLANT MINE AT NAVPOINT

Instructs the Captain of the vessel(s) in question to intercept the current Navpoint and plant a mine there. Only some ships carry mines (see APPENDIX III: THE FW FLEET for a list of ships and parts to make this determination).

ABANDON MISSION

Instructs the Captain of the vessel(s) in question to engage hyperdrive and leave the solar system. All of your ships should leave the system before you engage your own hyperdrive, otherwise those ships will be considered lost.

ABANDON SHIP

Instructs the Captain of the vessel(s) in question to evacuate the ship (via escape pods). Once the crew has abandoned their vessel, explosive packages (not the standard self-destruct) destroy the ship to prevent hostiles from stripping technology and other secrets from it.

EVACUATE CREW FROM SHIP

Instructs the Captain of the vessel(s) in question to intercept the selected ship and evacuate its crew.

PICKUP RESCUE POD

Instructs the Captain of the vessel(s) in question to intercept and pickup the selected escape pod.

JAM ENEMY COMMS

Instructs the Captain of the vessel(s) in question to turn on communications jamming (if it is not on already).

DO NOT JAM COMMS

Instructs the Captain of the vessel(s) in question to turn off communications jamming (if it is not off already).

The following orders are sent only to enemy ships:

SURRENDER TO FW FORCES

Instructs the captain of the enemy vessel(s) in question to surrender to one of the FW ships in the system.

THE FW FLAGSHIP SURRENDERS

If you issue this order you yourself are offering to surrender your ship to the enemy ship in question. This is used only to avoid the complete destruction of your vessel, which would result in a lower score than surrendering. Of course, whether or not the enemy accepts your surrender is an entirely different matter.

OFFER SAFE PASSAGE

Informs the enemy ship in question that he will not be fired upon by FW forces if he or she does not interfere in your mission. This may expedite certain situations where destroying extraneous enemy ships would use up valuable time.

SURRENDER CARGO

Orders the enemy ship in question to surrender its cargo. If accepted, you may then use the controls on DRPCGO to take the cargo.

REFUSE CARGO

Refuses a request from the enemy ship in question to surrender your cargo.

OFFER CARGO

Offer the enemy your cargo in an attempt to stop his attack.

The following orders are sent only to outposts:

REQUEST DOCKING RIGHTS

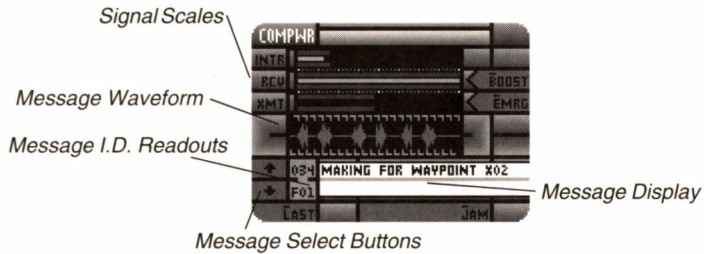
Requests docking with the outpost in question for resupply and repair. This message must be sent to a neutral outpost when requesting access to its facilities.

THREATEN WITH FORCE

Demands docking with the outpost in question. This is an option after being denied docking access to a neutral outpost.

COMPWR — Communications Power Systems

This panel lets you monitor the strength of interference, as well as incoming and outgoing signals; it also accesses systems to boost reception and transmission, and jam enemy communications systems. Finally, it displays signal information about a selected message, to let you track down why it may have been garbled.



The following is a breakdown of the elements of the COMPWR quadpanel.

Signal Scales

The top three rows of this quadpanel contain horizontal "thermometer"-type scales; these are marked INTR, RCV and XMT. Each of the scales is capable of measuring two pieces of information; the inner, yellow bar measures one level, while the two, outer red bars measure the other. The two red bars are always the same length, "framing" the yellow bar between them.

Each scale is explained below:

INTR — INTERFERENCE SCALE

Interference refers specifically to "stellar" interference, that is, the energetic interference or "noise" generated by stars on the map. Generally, interference is determined by the temperature of the star(s) and your range from it/ them. The closer you are to any star, the more likely you are to encounter some interference. You can check the stats of any stars on the map by using the probe function of the NAVSEN quadpanel. (For details on Star types and their effects, see PART II: OVERVIEW.)

The more interference a star or stars generate, the more likely it is that your transmissions may be blocked.

The INTR scale is a "thermometer" type scale representing the current level of interference generated by stellar bodies (stars) in the system. The yellow bar indicates the current interference level, and the red bars represent the point at which the interference will impede transmissions. As long as yellow bar is shorter than the red, interference should not be a problem. If it is longer than the red bars, you may have problems transmitting orders.

If the yellow bar is longer than the red, then your transmissions may be blocked by the interference and a "BLOCKED" message will scroll across the marquee line. Stellar interference is greater the closer you are to a star, so you can attempt to minimize its effects by navigating away from any stars. If the interference is still too great, you can attempt to use the EMERGENCY POWER BUTTON (see below).

RCV — RECEIVE SCALE

The second scale, RCV, shows you the strength of received/incoming signals. The strength of the current message received (chosen by the *Message Select Buttons*, see below) is indicated by the yellow bar. If a message is too weak to be received, or is blocked by system interference or your jamming systems (see below), a "MESSAGE GARBLED" alert appears in the *Message Display* or *Current Message Display* on the COMRCV panel, and on the *Message Display* at the bottom of this panel; in this case you might want to use **BOOST** (see below) to try to enhance incoming signals so that you can read them.

On this scale, the red bars measure nothing, and are always the full length of the meter. They are here to provide consistency with the other scales.

XMT — TRANSMIT SCALE

The third scale, XMT, displays two pieces of related information. The red bar indicates the estimated minimum level the outgoing signals' strength must reach in order to be properly received, and the yellow bar measures the current actual signal strength of your communications system. If the pointer is above the line, then your transmitter is powerful enough to reach other ships in the system. If it below the line, your transmitter is too weak to be received. If your transmissions are too weak to be received normally, as a last-ditch effort, you can use the **EMRG** button to boost your transmitter strength (see EMERGENCY POWER BUTTON below).

BOOST (O)

Located at the right end of the RCV scale, the **BOOST** (B) button is a toggle which, when activated, overrides the power-level safety on your ship's communications circuits. The result is that the incoming signal strength is increased by from 1 to 15 points (depending on what communications system your ship carries). Using it carries a penalty, however, as it continually strains and damages your communications system. If you need it, it is recommended that you turn it on *only* when absolutely necessary; watch the RCV scale and the text of any incoming messages to see when signals need boosting.

EMERGENCY POWER BUTTON

Located at the right end of the XMT scale, the **EMRG** (E) button is a toggle which, when activated, overrides the power-level safety on your ship's transmitter. The result is that when you send a message, its signal strength is increased by 28 points. Emergency Power is used when the interference levels are so high that they impede transmissions from your ship (see above). When **EMRG** is active, the communications system sustains six percentage points of damage *every time* you transmit an order.

Message Waveform Scope

The small black rectangle at the center of the quadpanel displays the waveform of the current message; it functions identically to the *Waveform Scope* on the COMRCV quadpanel. Each message has its own, unique waveform; and the amplitude of the waveform, measured by the average length of its green lines, is a general sign of the strength of the current message at the time of reception.



Message Display

The two white lines near the bottom of the quadpanel function identically to the *Message Display* and *Current Message Display* on the COMRCV quadpanel. They display the text of the current message, whose signal strength is measured on the RCV panel and whose waveform is displayed on the *Message Waveform Scope*.

Message I.D. Readouts

The linked tan boxes to the left of the *Message Display* function identically to the *Message I.D. Readouts* on the COMRCV quadpanel. They show the I.D. number of the current message and the I.D. of its sender.

Message Select Buttons

Located to the left of the *Message I.D. Readouts*, the  and  buttons choose the current message from the list of received messages. They function identically to, but independently from, the *Message Select Buttons* on COMRCV.

LAST (L)

This button selects the message at the end of the list as the current one. It allows you to quickly focus all of the displays of this quadpanel onto the most recent message, in case you were unable to receive it and need to find out why in a hurry.

JAMMING SYSTEMS

The button at the bottom of this panel, **JAM** (J), activates your ship's jamming systems. This allows you to block communications between enemy vessels within a 10 million kilometer radius from your ship. Jamming communications will limit the effectiveness of enemy Captains that try to function as a group.

The drawback to **JAM** is that, while it is active, it makes it harder for *you* to receive incoming messages as well.

TACTICAL PANELS

As the name implies, these panels are from where you undertake most tactical action. All combat and defense related activities are carried out from this panel, including ship to ship combat and boarding hostile ships and outposts.

Your ship's tactical systems are among the most complex on your ship. Even the "simple" activity of ship-to-ship combat breaks down in many complicated tasks, like locking onto targets, undertaking tactical maneuvers, setting your desired position and range from a target, toggling defensive systems on and off, studying the combat area, picking weapons settings... and, of course, the most important thing, firing on enemy ships. However, they have been separated onto five quadpanels, so that their many control scan be easily identified and accessed. The quadpanels are:

TACFIR	Targeting scope and lock-on controls; fire and weaponry setting controls
TACMAP	Combat map
TACMAN	Sets your position and range to a target; accesses tactical maneuvers and actions
TACDEF	Defensive system controls and readouts
TACSEN	Active Missile and incoming fire readouts

Operational Overview

Tactical is most commonly used for combat and combat related actions. Before you can combat a ship you must lock it into the TACFIR quadpanels. (TACMAN can also fulfill the same task.) Once a target is locked in, you can, if within firing range, attack it using Enhanced Beam Weapons (EBW) or missiles (if your ship is carrying any) via this quadpanel. The EBW strength and beam-width is selectable, as are which types of missiles you choose to fire (if your ship is stocked with two or more types).

The TACMAP quadpanel activates a tactical map that is like a pared-down version of NAVMAP. It only displays map information relevant to battle and relative to your ship.

Navigational control of your ship in combat can either be left to the NAVIGATION panels or overridden using one of the TACTIC buttons on TACMAN, which allow you to take up certain positions relative to the current target, evade, escape, or board it. The ATTITUDE controls on that quadpanel allow you to set the actual position and range that you want relative to a target when using some of the TACTIC modes.

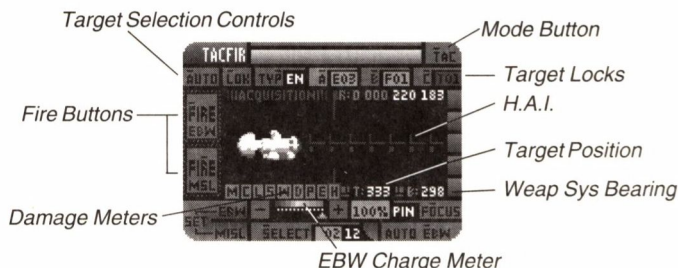
The TACDEF quadpanel allows you to raise and lower your ship's defensive shields as well as toggle on Anti-Missile CounterMeasures (AMCM), launch missile-fooling Decoys and Mines.

Damage sustained by your own ship is displayed, as always, on the Master Control Bar at the top of the screen. Reports on outgoing missiles and incoming weapons hits can be found on the TACSEN quadpanel.

What follows is a description and breakdown on each Tactical quadpanel:

TACFIR — Tactical Fire Control

This quadpanel allows you to select and lock onto targets, and attack them with your ship's weapons systems. It consists of Targets A-C; Target Selection Controls; a Targeting Scope; Target Readouts; Target Damage Meters; Fire Buttons; Set EBW Controls; and Set Missile Controls.



Quick Operational Overview — Select one of the three target slots **A**, **B** or **C**; if it already has a target selected for it the *Targeting Scope* will lock onto it. Press **TYP** (P) repeatedly until the type of target you want is visible, then press **LOK** (L) and select one of the targets that appears.

The target will appear in the *Targeting Scope*, which can be in one of two modes. *Visual Mode*, activated by pressing **VIS** (V), shows a visual image of the target, from which its relative bearing and shield facing can be determined. In *Tactical Mode*, activated by pressing **TAC** (T), the vectors show the bearings of the two vessels relative to each other (and *not* to any compass heading), while the colored circles (which are divided into four sections each) show which shield on each ship is facing the enemy. The *Target Readouts* will show the range, heading and bearing of the target, and the *Target Damage Meters* will show the status of the target's systems. The ACQUISITION light will activate when you have a solid lock on the target.

While you wait to lock-on, use the *Set EBW and Missile Controls* to choose the weapons to bring to bear. Use *EBW Power Select* to choose a charge level for your EBW's, and use **FOCUS** (O) to select a normal beam, wide beam or pinpoint a specific ship's system. Use **AUTO EBW** (E) if you want to fire EBW's continuously until the target (or targeted system) is destroyed. If you choose to fire missiles, press **SELECT** (S) and choose from the types stored on-board. Finally, when the ACQUISITION light is on, press **FIRE EBW** (F) (unless **AUTO EBW** is active) and **FIRE MSL** (R) to activate weapons. Remember that EBW's need to recharge between shots, and you have a limited number of missiles indicated by the black readout tucked under the **SELECT** button.

A breakdown of the features of this quadpanel follows:

Targets A-C

This section consists of three action buttons, **A**, **B** and **C** (keyboard users simply press the indicated letters), which represent target "slots". Each slot can contain the I.D. of a given ship or outpost, identified by the small readout at the right edge of each button. The current target is selected by and whichever button is highlighted.

Therefore, you can have three targets locked-in, one per slot, and switch back and forth between them as you like.

When a target is locked into one of these slots, the color of the readout indicates its status. If the readout is tan, the target is normally active. If it is yellow, then the target has been captured by FW forces. And if it is red, then target has been destroyed.

Whenever you highlight one of these buttons, the targeting system immediately swings around to get a lock on the specified item.

Most tactical actions and maneuvers are taken relative to whichever target is currently locked in. For instance, if you activated the **POSIT** function (see TACMAN section below), your ship would take up a position relative to the currently selected target. If you then changed from target A to target B, your ship would then attempt to take up a similar position relative to target B.

To enter a target into one of the slots, highlight the selected button, select the type of target that it is using the **TYP** (P) button, and then use the **LOK** (L) button to lock it in (see *Target Selection Controls*). The computer will automatically enter the I.D. for the specified target into the specified target slot.

Since the currently selected target affects your maneuvering as well as your weapons use, these target buttons (along with the *Target Selection Controls*) are duplicated on the TACMAN quadpanel. The two sets of buttons are linked together; any change in targeting, so that both panels select the same target at all times.

Target Selection Controls

These controls are used to select targets for the Target A-C slots. The three buttons to the left of *Targets A-C* are used to pick and lock in targets. As mentioned above, *Targets A-C* are duplicated on the TACMAN quadpanel, and these controls are duplicated there as well.

TYP (P)

The button just to the left of the **A** button selects the type of target that can be selected. The small black readout tucked under the right edge of the button displays the currently selected type. Pressing **TYP** cycles the readout through three possible target types: "OU" for outposts, "FW" for FW ships and "EN" for enemy ships. "EN" is the default setting when you first access this quadpanel.

Since these controls are linked with the ones on TACMAN, the type selected here will also be displayed in the readout on that quadpanel.

LOK (L)

Located to the left of **TYP**, this button allows you to lock into a specific target of the chosen type (see previous item). Pressing it accesses a roll-down menu listing every target of the chosen type; select one of the items in the list and it will be entered into whichever one of *Targets A-C* is highlighted. The *Targeting Scope* will adjust to lock on the new target, and the *Target Readouts* and *Target Damage Meters* will change to show its status.

AUTO (T)

This is a toggle action button. When activated, it causes your ship's computer to automatically switch to the closest of the targets currently in the Target A-C slots. For example, if you had targets in all three slots, had target **A** selected, but target **C** was the closest to you, when you activated **AUTO** the highlighted target button would automatically be changed from **A** to **C**. If, while **AUTO** was activated, another of the selected targets were to become the closest in range, the selected target would again change.

Toggling **AUTO** off (unhighlighted) switches this mode off, and the system will no longer automatically lock onto the closest of the locked in targets.

Manually activating one of the Target A-C buttons deactivates **AUTO** mode.

Targeting Scope

The display rectangle surrounded by readouts at the center of the screen displays your target as well as targeting-related information. It functions in two modes:

Visual Mode

In this mode, targets are displayed as computer generated images which do not change size as their range alters, although the viewing angle of target vessels will change to reflect that ship's current heading. Missiles launched and EBW's fired by your ship, as well as successful hits on the target by *any* ship, are displayed as well.

One feature of *Visual Mode* should be noted. The Horizontal Attitude Indicator (or H.A.I.) is simply a horizontal gauge which displays "tick marks" on a line which are used to visually indicate when your weapon system is turning to maintain a bearing on a target. The space between each "tick" on the scale represents 10 degrees of bearing.

Tactical Mode

Each of your ship's shields protects a quarter of the ship; the same is true for the target's shields. Since each shield is lowered separately by weapons fire, a worthwhile tactic is to concentrate fire on one of the target's shields, so that you don't have to waste time and resources bringing down multiple shields. Therefore, the main purpose of *Tactical Mode* is to show which shield on your ship is facing the target and vice-versa.

Both your ship and the target are represented symbolically with vectors and colored circles. The white vector in a green circle represents your ship, while the yellow vector in a orange circle represents the target. The directions in which the two vectors are pointing show the bearings of the two vessels *relative to each other*, and not to any specific compass heading; the two ships are rotated so the target is to your ship's right on the scope. The circles surrounding each ship are divided by black lines to show the locations of the four shields.

The button in the top-right corner of the panel selects between the two modes; it is titled **VIS** (V) when activating *Visual Mode*, and **TAC** (T) when activating *Tactical Mode*.

Target Readouts

Located above and below the *Targeting Scope*, there are number of readouts associated with the selected target. They are as follows:

Target Position

The readout which appears below the scope and to the right of the T: flag shows the currently selected target's position in degrees (0 to 359), relative to your ship's position in the solar system. The value 0 (zero) is always due "north" on the system map.

Weapons Bearing

The readout which appears below the scope and to the right of the B: flag displays the current bearing of your ship's weapon system in degrees (0 to 359), relative to your ship's position in the solar system.

The EBW projectors and missile launchers are directional, and can be rotated in any direction. And the value alongside the B: flag will change as your weapons system constantly attempts to keep the selected target, if any, centered.

For a lock to be achieved on the currently selected target, the readout here must match that of the Target Position readout (T:, see above).

If no targets have yet been locked into the *Targets A-C* selectors (see below), then the *Weapons Bearing* will read 0 (zero).

Range

The readout which appears above the scope and to the right of the R: flag displays the currently selected target's range from your vessel in kilometers. Range is very important to know, because if you are beyond particular distances, certain actions are futile. For instance, a target ship that is under 500,000 kilometers away is considered within the effective firing range of EBW's, while missile ranges may be considerably less.

The operational range of each range-restricted system or function is explained in the section on its operation. However, for quick reference, the following is the effective maximum range of each of listed items. You should be under the specified range to use that item or system:

<u>Item/System</u>	<u>Maximum Range</u>
EBW	500,000km*
Missiles	variable**
Board ship	5,000km
Board/Dock outpost	1,000km

*-Actual EBW maximum range is 3 million kilometers. However, as it takes ten seconds for a beam to cross that distance, and ships rarely stand still for you to shoot at, the effective combat range for EBW fire is considered to be just half a million kilometers.

** - Dependent upon a given missile type's fueled flying time and the course and velocity of the target.

Acquisition Indicator

When the currently selected target (see *Target A-C*, below) is at the center of the Targeting Scope and the Target Position (T:) and Weap Sys Bearing (B:) readouts match, this flashing indicator bar will appear above the left side of the Targeting Scope.

The bar contains cycling colored "blips" and an "ACQUISITION" message. When this bar is present, your targeting system has achieved a lock on the current target, and you may fire your weapons.

If you fire when the *Acquisition Indicator* is not present you will probably not hit your target, as EBW's will be fired at nothing and missiles have no targets specified.

Target Damage Meters

Immediately below the left side of the *Targeting Scope* is a row of nine small, colored boxes. These are meters which use colors to represent the status of each of the currently targeted ship or outpost's nine primary systems. The color-coding system here is the same as on the Master Control Bar: a 100% percent operational system is green, and damage increasingly changes that color from green to yellow, to orange, to red, and finally to black. Once a meter is black, the system in question is 0% operational, and technically "destroyed".

NOTE: A ship may repair damaged systems, but once a system is 0% operational (destroyed), it cannot be repaired without the help of a sufficiently sophisticated outpost.

Inside each box is a letter identifying the system represented by that particular meter. The list of letters read "MCLSWDPEH" and have the same meaning as those on the Master Control Bar (See MASTER CONTROL BAR at the beginning of this section).

If the target is an outpost, all systems other than Shields will be white, since Shields are the only available system for outposts.

Finally, if you adjust your ship's EBW to fire a pinpoint beam at one of the target's systems, that system will be indicated on these meters by a flashing outline.

Fire Buttons

These are the simplest controls on this quadpanel, and ironically, the most deadly. These two buttons control the activation of your beam and missile weapons.

FIRE EBW (F)

This is a trigger type action button which, when activated, fires the Enhanced Beam Weapon at the current target. The beam travels at 1c (lightspeed) and has a maximum strike range of 3 million (3,000,000,000) kilometers (although your chances of hitting as moving target at ranges greater than 500,000 kilometers are very slim). The force of the beam is determined by the EBW CHARGE METER and the EBW POWER SELECT controls (see *Set EBW Controls*).

FIRE MISSILE (R)

This is a trigger action button, and activating it causes your weapons system to attempt to fire one missile of the currently selected type at the current target. If no missiles of the selected type are present, no missile will fire. Each time you press **FIRE** another missile launch is attempted. Thus, if you have lots of missiles in stock, you can launch a veritable salvo at the selected target.

Set EBW Controls

These controls allow you to adjust your Enhanced Beam Weapons (EBW) to specify the type and level of damage that you want.

EBW CHARGE METER

Located below the *Target Damage Meters*, this meter shows the charge status of the EBW batteries. If the meter's bar is full then 100% power is available. If the bar is partially full, then lesser percentages are available. The system recharges at a steady rate (variable depending on a given ship's equipment and damage the system has sustained), so if you wait, the power climbs.

EBW POWER SELECT

Surrounding the EBW CHARGE METER, the actual percentage of potential EBW "hit" power your wish to use is selected with these controls. The position of the arrowhead pointer along the EBW CHARGE METER sets the percentage of EBW power you wish to apply when firing. The numerical value of this strength is displayed in the small readout to the right of the + button.

The arrowhead may be moved in one of two ways. Players with compatible mice can simply drag the arrowhead along the scale, releasing it when it is where they wish it to be. Keyboard users can use the - and + keys to move the arrowhead along the scale to the left and right respectively. As with most thermometer type scales, pressing - or + switches on a "move pointer" mode which remains "on" until you press another key.

In some circumstances you may find that the arrowhead cannot be moved to the top of the scale, or that during or after battle, that it has slipped down the scale and cannot be moved back up it. This is an indication that the weaponry system has sustained damage, and that the EBW beam projectors are incapable of firing at power levels greater than those the arrowhead can be moved to. In such a case, the only way to restore full EBW power is repair the weaponry system (see DRPREP in this section on the manual, and also the section pertaining to system damage in PART II: OVERVIEW).

FOCUS (0)

Located to the right of EBW percentage readout, this button determines the beam-width/focus of your ship's EBW fire. Pressing it accesses a roll-down menu with three types of focus options:

Normal Beam

Sets the beam to normal width. This is the first option in the list.

Wide Beam	Spreads the beam widely, making it easier to hit evasive targets. However, although your chance of achieving a hit increases on wide beam setting; because the beam is "fanned out" the hit strength is diminished. This is the second option in the list.
Pinpoint Beam	Sets the beam to pinpoint width. In this mode your odds of hitting an evasive target drop, however, this is made up for in that you can pinpoint specific systems of the target, and the power of the EBW will be directed against that system alone. The last eight options on the list allow you to target any specific system except Emergency Power, because those systems are buried in the heart of every spaceship, and cannot be pinpointed.

The readout tucked under the left edge of the **FOCUS** button indicates the currently selected beam width: "NOR" for normal, "WID" for wide, and "PIN" for pinpoint. If a pinpoint width is selected, the system that was pinpointed will be marked by a flashing rectangle on the *Target Damage Meters*.

AUTO EBW (E)

The button in the bottom-right corner of the quadpanel allows you to set your EBW`s to fire automatically. When **AUTO EBW** is highlighted, your ship will fire EBW`s at the current target as long as the *Acquisition Readout* (see *Target Readouts*, above) is flashing. The ship will fire when the EBW`s are charged to the level set by EBW POWER SELECT, and will fire again as soon as they recharge to that level.

If beam width is set (via **FOCUS**, see above) to either wide or normal, the ship will continue firing indefinitely. If it set to pinpoint a specific system, **AUTO EBW** will cease fire when the system is destroyed.

Set Missile Controls

The controls for configuring missiles are very simple; there are just a button and two readouts. The **SELECT** (S) button activates a roll-down menu listing the type-numbers, quantities and names of the nine existing missile types. You can select any missile type you like, but you will only be able to fire them if you have one or more missile of that type aboard. Naturally, a quantity of "00" for a missile type means you have none of them aboard.

The two readouts tucked under the right end of the button indicate the type-number and quantity remaining of the currently selected missile type. The tan readout contains the missile type number, and the black box contains the quantity.

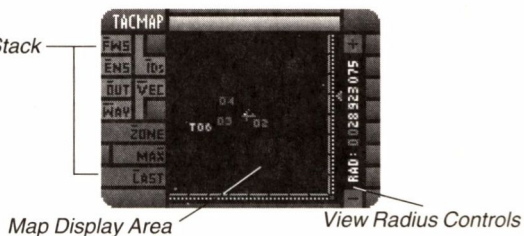
Missiles can be restocked by docking with outposts. The more sophisticated the supply capabilities of an outpost, the greater range of missiles they supply. However, remember that not every ship can carry all types of missiles. The type of weaponry system a given ship carries determines the types and number of missiles the ship can carry.

Details on missile types, their uses, range, etc., can be found in APPENDIX IV: MISSILE SPECIFICATIONS.

TACMAP — Tactical Map

This quadpanel provides a special version of the map display on NAVMAP with fewer controls to worry about while in battle, which has special controls that apply specifically to starship combat. The primary differences are as follows:

Button Stack



- Only potential targets (enemy and FW ships, outposts) and waypoints can be displayed.
- The map view is limited to your vessel's sensor range, with no telemetry from other ships or "mix" modes available.
- There is no course project mode.
- EBW and missile fire and "hits" are displayed on the map.

There are nine buttons and one thermometer scale related to the map. They are as follows:

Any or all of the following six can be highlighted at any time.

ENS (N)	When highlighted, the map displays enemy ships.
FWS (F)	When highlighted, the map displays FW ships.
OUT (O)	When highlighted, the map displays outposts.
WAY (W)	When highlighted, the map displays waypoints.
ID s (I)	When highlighted, the map displays vessel and object I.D.'s.
VEC (V)	When highlighted, the map displays ships as vectors, and destroyed ships as empty circles. When darkened, ships are displayed as dots.

- ZONE (Z)** When activated this recalibrates the map radius controls so that the maximum map radius is 500,000 kilometers instead of your ship's maximum sensor range, allowing for easier zoom adjustments in combat.
- MAX (X)** When pressed this sets the map radius to its maximum, which will be 500,000 kilometers if **ZONE** is active or your ship's sensor range.
- LAST (L)** When pressed this sets the map radius to whatever it was before its last change.

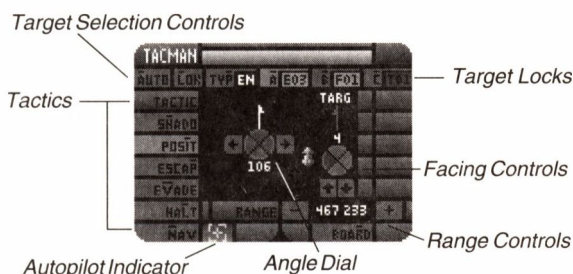
Mouse users can, as on NAVMAP, move the mouse over the map, frame an area, and click the left button to zoom in and the right button to zoom out. They can also drag the arrowhead below the scale along the side of the map to adjust the view radius.

Keyboard users must adjust the zoom radius by using the + and - keys, which are equivalent to the increase and decrease map radius buttons bracketing the **RADIUS**: readout.

See the section on **NAVIGATION PANELS** for more details of working with map displays.

TACMAN — Tactical Maneuvers

The controls on this quadpanel allow you to engage maneuvers used in ship-to-ship combat, set specific heading and angle relative to the target, and keep weakened shields turned away from your enemy. Keeping your ship moving with these controls will keep your ship intact and your crew alive. This panel is made up of three sections: Targets A-C and Target Selection Controls; Tactic Buttons; and Attitude Controls.



Quick Operational Overview — If you did not do so already, use the *Target Selection Controls* to select a target. **SHADO (H)** and **POSIT (I)** move your ship to a user-selected attitude within combat range of the target. **ESCAP (P)** moves your ship at full speed away from the target, while **EVADE (V)** plots random course changes to prevent an enemy to lock onto you. **HALT (L)** stops all maneuvers, while **NAV (N)** returns control to ship's autopilot, if it was active before a tactic was selected. A special tactic, **BOARD (R)**, is used when trying to capture an enemy ship, enemy outpost or a neutral outpost that has refused you permission to dock, but only works when the range to the target is within 5,000 kilometers if it is a ship, and within 1,000 kilometers if it is an outpost.

The **SHADO** and **POSIT** tactics use the *Attitude Controls* to set your ship's range and position relative to the target. In **SHADO** mode, the ANGLE DIAL puts your ship at an angle relative to the ship's bow; in **POSIT** mode it puts your ship at an angle relative to the map. Move the flagship icon around the dial or press the ◀ and ▶ buttons to change the angle. Use the + and - buttons to adjust the range to the target. Use the ▲ and ▼ buttons to choose which of your shields should face the enemy. Changes in these controls will be immediately acted upon.

The following is a breakdown of the features of the TACMAN quadpanel:

Targets A-C and Target Selector Controls

The controls along the top two rows allow you to select a target for both the TACFIR and TACMAN quadpanels. Since the controls work identically on both panels, refer to TACFIR if you need instructions on using them.

Tactic Buttons

The six buttons along the left side of the quadpanel (excluding the *Target Select Controls*) and the **BOARD** (R) button at the bottom-right select different maneuvering tactics. Each of the following (except **NAV** (N)), when activated, will remain active until another button in the bank is activated, or when navigational control is usurped via NAVHLM. Only one of the buttons can be active at any one time.

- | | |
|------------------|---|
| SHADO (H) | Initiates a "shadowing" maneuver, where your ship will attempt to take up the range and position set by the <i>Attitude Controls</i> relative to the current target. The angle will be set <i>relative to the target's bow</i> , which always represents 0 (zero) to the shado mode. Therefore, if the ANGLE is set at 180, your ship will constantly attempt to remain behind the target no matter which way it faces on the map. Because your ship must try to maintain an angle relative to potentially turning and moving targets, it is much more difficult to achieve and maintain target acquisition in SHADO mode than it is in POSIT mode (see below). |
| POSIT (I) | Initiates a "positioning" maneuver, where your ship will attempt to take up the range and position set by the <i>Attitude Controls</i> relative to the current target. The angle will be set <i>relative to the map</i> , where "up" always represents 0 (zero) to the position mode. Therefore, if the ANGLE is set at 180, your ship will constantly attempt to remain "due south" of the target on the map. |
| ESCAP (P) | Initiates an "emergency escape maneuver" in which your ship determines heading of the current target and immediately thrusts at full power in the opposite direction (180 degrees different from the target) in an attempt to reach and maintain a "safe" distance from the target: 900,000 kilometers or greater. |

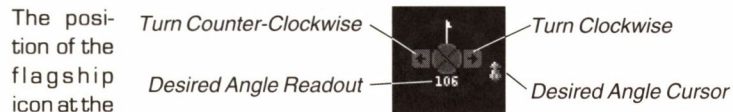
- EVADE (V)** Initiates an evasive action sequence. In such a mode, your ship proceeds at high thrust and randomly changes course every few seconds. This maneuver is used to shake missile fire or try to avoid having enemy ships get and keep you in their gunsights.
- HALT (L)** Causes your ship to immediately perform a full power braking maneuver, coming to a complete halt relative to the current solar system.
- NAV (N)** This button, when highlighted, hands navigational controls back to the NAVHLM panel, in whichever mode it was last set prior to having been overridden by the TACTIC maneuvers.
- BOARD (R)** This button appears if the target is an enemy ship, enemy outpost or a neutral outpost that has refused you permission to dock. You must be within 5,000 kilometers of a ship or 1,000 kilometers of an outpost in order to board it.

The green box next to the **NAV** button is a readout which indicates which system is directing the ship's movement. If the readout shows a flashing crosshairs, then one of the **TACTIC** buttons is active. If the readout shows a flashing yellow sextant, then the ship's autopilot, accessed thru **NAVHLM**, is active. If the readout shows nothing, then **NAVHLM** (if it is active) can steer the ship with *Manual Helm Control*.

Attitude Controls

This part of the quadpanel consists of controls which allow you to set your desired attitude relative to a target when using one of the tactical maneuvering controls (see below). It has three parts: the **ANGLE DIAL**, **RANGE CONTROLS** and **FACE SHIELDS**.

THE ANGLE DIAL



The position of the flagship icon at the perimeter of the dial represents a position, in degrees, set relative to a target vessel or outpost (the dial's center). The angle can be from 000 to 359 degrees.

The dial can represent two different things. If you select the **SHADO** maneuver, the top of the dial represents the "bow" or "front" of the target vessel, and the position of the ship icon at the rim of the dial represents your ship's desired position relative to the direction the target is facing. On the other hand, if you select the **POSIT** maneuver, the top of the dial represents the top of the map, and the position of the ship icon at the rim of the dial represents your ship's desired position relative to the target's position in space, not relative to the target's heading.

The following is a breakdown of the elements of the Angle Dial.

Desired Angle Readout

This displays the desired angle you want your ship to take in a shado or positioning maneuver. The value displayed here is determined by the position of the *Desired Heading Cursor* (see next item) on the outside of the Dial. When you set a new desired heading this readout will change instantly to reflect it.

Desired Angle Cursor (Flagship Icon)

This operates identically to the Desired Heading Cursor on the *Manual Helm Controls* of NAVHLM. The icon represents your current flagship, and its position around the dial is important, however, the way the icon itself is pointing (always up) is not of any concern.

The position of the icon on the outside of the dial indicates your desired angle in degrees. The actual numerical value of the heading is displayed in the *Desired Angle Readout* (see above).

There are two ways to change the desired angle: dragging the pointer with the mouse, or using the *Turn Clockwise* and *Turn Counter-Clockwise* controls (see below).

To drag the pointer, you must have a mouse. Click the left mouse button on the pointer, and, while holding the button down, "drag" the pointer around the dial to the desired position. As you move the pointer, the *Desired Angle Readout* will change to reflect the new setting. When you release the mouse button, the pointer will stay where you left it.

If **SHADO** or **POSIT** tactics are active, any changes to the desired heading will be enacted as soon as they are made.

Turn Clockwise

This function is activated by the ➡ button, and its purpose is to move the *Desired Angle Cursor* around the Heading Dial in a clockwise direction. When you activate the ➡ button by clicking on it with the mouse, it stays "on" only as long as you hold the mouse button down. If using the keyboard, the button stays "on" and the icon moves clockwise until you press another key.

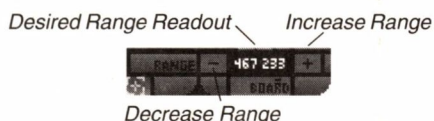
Turn Counter-Clockwise

This function is activated by the ◀ button, and its purpose is to move the *Desired Angle Cursor* around the Heading Dial in a counter-clockwise direction. When you activate the ◀ button by clicking on it with the mouse, it stays "on" only as long as you hold the mouse button down. If using the keyboard, the button stays "on" and the icon moves counter-clockwise until you press another key.

NOTE: If neither the **SHADO** OR **POSIT** buttons are activated, the settings of the *Attitude Controls* won't have any effect.

RANGE CONTROLS

This portion of the ATTITUDE box is where you can adjust your range for shado or positioning maneuvers. There are a number of items associated with setting the range:



Desired Range Readout

This readout displays the numeric value of your ship's desired range, which can be anything from 0 to 500,000 kilometers. It is changed using the *Increase* and *Decrease Range* buttons (see next items).

Decrease Range Button

This function is activated by the - button, and its purpose is to decrease the distance in the *Desired Range Readout*. When you activate the - button by clicking on it with the mouse, it stays "on" only as long as you hold the mouse button down. When you activate by right-clicking, the readout skips directly to the minimum range, 0 kilometers. If using the keyboard, the button stays "on" and the pointer attempts to decrease the desired range until you press another key.

Increase Range Button

This function is activated by the + button, and its purpose is to increase the distance in the *Desired Range Readout*. When you activate the + button by clicking on it with the mouse, it stays "on" only as long as you hold the mouse button down. When you

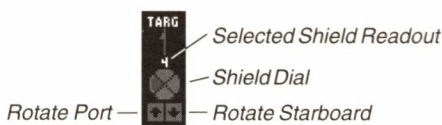
activate by right-clicking, the readout skips directly to the maximum range, 500,000 kilometers. If using the keyboard, the button stays "on" and the pointer attempts to increase the desired range until you press another key.

If in **SHADO** or **POSIT** mode, any changes to the *Desired Range Readout* will be enacted as soon as they are made. If not in either of these modes, they won't have any effect.

FACE SHIELDS

This final section of the *Attitude Controls* allows you to specify which of your ship's four shields you wish to try to keep towards the current target. This is

very useful, particularly when some of your ship's shields have been seriously depleted (see TACDEF below), and you wish to keep your strongest defenses towards the enemy.



The arrow pointing towards the word TARG indicates the direction of the target, and the number below the arrow indicates which shield you wish to keep towards that target. The default is shield 1, the bow shield, but you may, by using the next shield and previous shield buttons, the **▲** and **▼** buttons, turn any shield towards the target. The shield dial spins as you use these buttons.

The shield dial also shows, by the colors in each of its four quadrants, the status of each of your ship's shields. As your shields decrease in effectiveness, they change color from bright green (full power) to duller shades of green and finally black. This makes it easy to see which shields should be kept away from the enemy.

As with all of the settings in *Attitude Controls* this is only a "desired" shield facing. As your ship maneuvers to maintain position, course, etc., it is not always possible to keep a particular shield oriented towards the target.

Boarding/SQUAD DEPLOYMENT

When you have knocked out an enemy ship's shields and drive systems and moved within 5000 kilometers range, you can board the ship. When you have knocked out an enemy or neutral outpost's shields and moved within 1000 kilometers range, you can board the outpost.

If you have **Breach 2** or **Breach 3**, the IGS system *may* load and run that game, if an appropriate scenario has been linked. If **Breach 2** is not installed, or no linked scenario is located, then the SQUAD DEPLOYMENT panel appears.

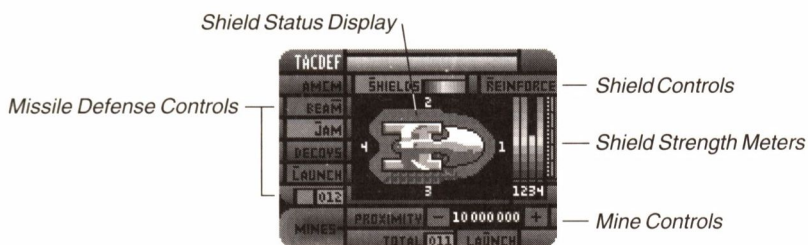
The SQUAD DEPLOYMENT panel reports on the boarding action status. It displays an image of a FWSF marine in full combat gear to the left, and an image of a member of the opposing forces to the right. The name of your Fleet Commander (now acting as a Squad Leader), and his/her squad-level statistics appear, as does the name of the enemy race/force and the rank of their Captain. The higher the rank of the enemy Captain, the better leadership the enemy will have, and the tougher they will be to beat.

At the center of the display is a Systems Control meter, which shows how much of the enemy ship's systems you control and how much is controlled by the enemy. A horizontal marker indicates the level of control you must reach in order to be victorious. When the meter for FWSF reaches that marker, you have won control of the alien ship. As your meter increases the meter for your opponents decreases, and vice-versa.

Under the image of the FWSF Marine and the enemy are a set of icons representing the forces in combat. The health of each is indicated by their color. The more red that shows, the more seriously injured the combatant. When a combatant's status meter is entirely red, he/she is dead and the icon is removed. On each side, one icon is separated from the rest. The separate figure on the FWSF side is the health of your Fleet Commander/Squad Leader. The separate figure on the enemy side is the enemy Captain. If the enemy Captain dies, his forces will be less organized and easier to beat. If your Fleet Commander dies the game ends.

You have no actual control over the boarding sequence. What you must do is keep your eyes on the percentage of systems you control, and weigh the health of your squad against that of the enemy forces. If your squad is badly injured and the enemy is not, or if your Fleet Commander is in danger of dying, or if you cannot seem to make any progress in gaining control of the enemy ship's systems, it would probably be a good idea to abort the boarding. You can abort by using the **WITHDRAW/UNDOCK (W)** action button.

TACDEF — Tactical Defenses



This quadpanel provides control over and gives status on your ship's primary defensive systems, including shields, mines and missile defenses.

The features of this quadpanel are described below:

Missile Defense Controls

Along the left side of the quadpanel are three options available when trying to defend against enemy missiles. The first two, **BEAM** (M) and **JAM** (J), fall under the category of Anti-Missile CounterMeasures (AMCM). The third, decoys, is a separate system. All three options can be active at the same time, if you wish. None of them have any affect on incoming EBW fire.

BEAM (M) bleeds power from your EBW charging system for use by automated defensive EBW batteries which attempt to shoot-down incoming missiles. The **BEAM** mode's primary disadvantage in combat is that it prevents your main EBW system from recharging as quickly as normal, hindering your combat firepower. Naturally, if **AUTO EBW** is active (see TACFIR), **BEAM** will take precedence over it when necessary.

JAM (J), on the other hand, uses special transmitters to confuse the guidance systems of incoming missiles. When a missile falls within the "sphere of influence" of the jammer, it should lose track of the target (you), and will most likely pass by without exploding. When the missile clears the jamming range, it may very well double-back and try again and again until it either gets lucky and hits you or runs out of fuel.

The one drawback to having jamming on is that the energy used for it is tapped from the shield generators, and thus the regeneration/recharge rate of the shields is lowered, meaning it takes shields longer than normal to build back up.

The third option, Decoys, launches devices whose role is to fool incoming missile into believing that *they* are your ship. When successful, they confuse the missile and you take no damage.

A decoy is fired by pressing the **LAUNCH** (L) on the left side of the quadpanel. The tan readout below the button shows how many decoys remain on the ship, and the gray box to its left flashed red as long as there is an active decoy outside your ship.

Each decoy has a lifespan of 30 seconds. There is no advantage to firing more than one decoy at a time. They can be resupplied by any non-settlement outposts.

Shield Controls

Two buttons control your ship's shields:

SHIELDS (S)

This button, at the top-center of the quadpanel, toggles the shields on (raised) and off (lowered). When the button is highlighted, the shields will be raised (if the shield system is functional). If the button is unhighlighted, the shields are off.

Always make certain that your ship's shields are raised prior to engaging an enemy vessel. The same "hit" on identical shielded and unshielded ships will have drastically different results, with the unshielded ship sustaining far more damage than the shielded one.

In beginner level games *only*, the shields are raised automatically when you are fired upon.

Finally, if your ship's **trawling systems** (see DRPREP under Docking/Repair Panels) are active when you press **SHIELDS**, trawling will be automatically turned off.

REINFORCE (R)

The button to the right of **SHIELDS** increases the speed at which shields recover from incoming fire by channeling power from the EBW recharging systems. This means that while **REINFORCE** is highlighted, your EBW's will not recharge, but you can still use the charge remaining in them to fire a last shot or two.

Shield System Readout

For your convenience, the *System Status Meter* for Shields is duplicated in the right-corner of the **SHIELDS** button. It runs from left-to-right instead of top-to-bottom.

Shield Status Display

This display contains an image of your flagship, viewed from above. If the shields are raised, a green "bubble" will encircle the ship. There are actually four shields, each composing one quarter of the defensive sphere. While the shape of the bubble is uneven and hugs the contours of the ship, it is still considered a sphere. The number of each shield is displayed next to its quarter of the bubble.

When your ship takes a hit with the shields up, the impact is shown on the affected shield and that shield flashes yellow. The shield then is diminished in color, from bright green to duller shades of green. (A corresponding power loss is reflected on the *Shield Strength Meters*, see below).

If any of the four shields are completely depleted of energy, the section of the bubble representing it will turn black until such time as it can regenerate/ recover power (see *Shield Strength Meters*, below).

Shield Strength Meters

There are four numbered meters here, each linked to a specific shield. The meters represent the strength of a given shield. Whenever a shield takes a "hit", the height of that shield's meter drops, and there is a corresponding loss of power, which takes time to build back up. Weak shields are less effective at preventing damage than strong shields, so it's a wise idea to keep your eyes on these indicators and try to keep the strongest shields towards the enemy (using FACE SHIELDS under the TACMAN quadpanel).

Mine Controls

Mines are explosive devices that are equipped with proximity fuses and can be launched from your ship. Their fuse can be set to any range from 500,000 kilometers to 20,000,000 kilometers; when an enemy vessel enters within the selected range, they detonate.

The proximity selected for a mine also determines the range in which it is destructive. This does not change the power level of the mine — it only changes where that power is focused. Therefore, a mine set with a very high proximity will cause little damage, since its power is dispersed over an enormous area.

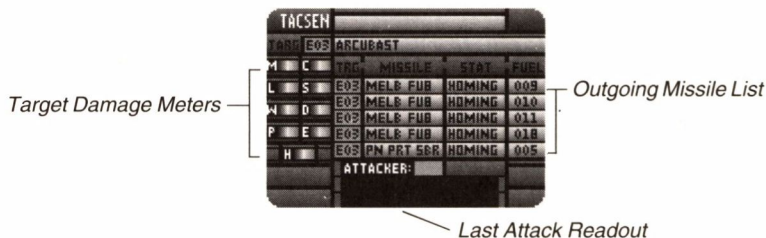
Although mines are only triggered by enemy ships, it pays to remember that once activated they are not selective in what they destroy.

The proximity of a mine is set with the - and + buttons in the bottom-right corner of the panel; the chosen proximity is displayed between them. To deploy a mine, press the **LAUNCH** (J) button below the proximity controls. The tan readout to its left counts the number of mines in your ship; having at least one mine aboard is naturally a prerequisite for launching one.

Currently, the Federated Worlds are the only government with mine technology. Similarly, the enemies you will encounter do not have the capability to detect your mines.

TACSEN — Tactical Sensors

This quadpanel reports on the status of missiles you have launched, and the last incoming attack.



It has three sections: the Target Status Report; the Missile Status Display; and the Last Attack Readout.

There are no buttons to press on this quadpanel. Its displays are detailed below:

Target Status Report

This collection of readouts and meters identifies the current target (selected from either the TACMAN or TACFIR quadpanels) and shows its status.

The tan readout to the right of the word "TARG" shows the I.D. of the current target. The white bar to the right of the readout shows its name. If these are blank, then no target is selected.

There are nine meters, each marked with a single letter, along the left side of the quadpanel which show the status of the target's systems. These meters work identically to the *System Status Meters* on the Master Control Bar, with colored bars that shorten by one line for every 10% of damage done to that system. A meter that is completely black indicates either a non-existent or completely destroyed system. The list of marker-letters reads "MCLSWDPEH" and have the same meaning as those on the Master Control Bar (See MASTER CONTROL BAR at the beginning of this section).

If the target is an outpost, all systems other than Shields will be blacked out, since Shields are the only available system for outposts. If no target is selected, then all meters will be black.

Missile Status Display

The white bars running across the center of this quadpanel list the status of your five most recently launched and active missiles. When you launch a missile, it is entered into the highest empty space in the list; as missiles hit or run out of fuel, empty spaces are created.

Missiles are considered "active," and thus appear on this list, from the time they are launched until they hit their targets or run out of fuel trying to. This panel does not report when a missile hits, but the results of the hit can be measured on the *Target Status Report*.

The format of the report is simple:

The first column contains the I.D. number of each missile's target.

The second column lists each missile's type (abbreviated to save space).

The third column shows the status of each missile, either "SEEKING" (the missile is locking onto the target) or "HOMING" (the missile is locked).

The fourth column shows the amount of fuel remaining in the missile. The amount of time a missile will remain active is based on this readout; when FUEL reaches 0, the missile will go inactive without hitting a target.

Last Attack Readout

The large readout at the bottom of the quadpanel displays information about the last attack on your ship. Tucked above it, a tan readout displays the I.D. of the last ship that fired on you and got a "hit". Below that a text display explains what happened, such as informing you that your ship was:

NORMAL BEAM
ON SHIELD 1



The example tells you that the enemy hit shield number 1 with a normal width EBW beam. Likewise, if you are hit by a missile, the enemy missile type number (see APPENDIX IV: MISSILE SPECIFICATIONS) is displayed along with the number of the shield hit. If you are hit with the shields down, or hit on an inoperative shield, the message will be similar but instead of saying "ON SHIELD n" it will say "THRU SHIELD n", indicating which shield location the fire passed through.

DATA RETRIEVAL PANELS

Although every control panel on your flagship is a technically part of the computer access system, it is on the Data Retrieval panels that you actually consult the computers directly for various types of information. There are seven different quadpanel associated with Data Retrieval:

DATFLT	Fleet Data
DATSHIP	Ship Data
DATDKT	Docket Data
DATOBJ	Objectives Report
DATSET	Setup Data
DATEVA	Evaluation Report

Certain controls appear on several of these quadpanels, so to avoid needless repetition they are explained here:

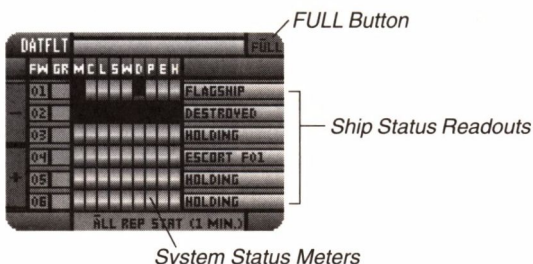
- In quadpanels featuring a large, black text display, if the data selected for access is larger than the display, the rest of it can be viewed by pressing the  and  buttons.
- In quadpanels which can access several different types of data, the type of data to access is selected by pressing one of the buttons along the left side or bottom of the panel. The selected button will be highlighted; only one of the buttons will be highlighted at any time.

In the sections that follow, these buttons will be indicated but their operation will not be noted. If a button requires a specific item to be chosen, the process will be explained.

What follows is a breakdown of the seven Data Retrieval quadpanels:

DATFLT — Fleet Data

This quadpanel is designed to allow you to get a quick overview of your fleet, listing all FW ships. You can see the stats for up to six ships at any one time. If more than that number are present, the - and + buttons allow you to see all of them.



The information on this panel is based upon status reports sent to your computer by each ship under your command, and those ships do not automatically report. Once the mission begins, if you want status reports you'll either have to periodically issue "REPORT STATUS" orders to certain or all ships (via COMXMT panel), or activate the **ALL REP STAT... (A)** button, which orders each ship to send a status report once every minute.

IMPORTANT: This means that the status reports on this quadpanel are **not always accurate!** If you make plans based on the information on this panel, make sure that you get reports on each ship's **current** status.

There are four readouts for each ship. They are, from left to right:

FW	The first readout lists the mission I.D. number of each vessel.
GR	If the indicated ship is a member of a Battle Group, the number of the Group (01 to 99) is displayed under this heading. Group Leaders are indicated by highlighted (white) backgrounds.
<i>System Status Meters</i>	Lists the operational capacity for each ship's systems, from ComSen to Hull. These are in the same order as the <i>System Status Meters</i> on the Master Control Bar.
<i>Ship Status</i>	Lists the action being undertaken by the indicated ship as of its last transmitted status report (i.e.- "HOLDING"). These status reports are abbreviated, and are visible in full form on the combined DATFLT/DATSHIP panel (see below).

Your own ship's status will always read "FLAGSHIP".

FULL (U) — There is a full-sized panel which combines the elements of both DATFLT and DATSHIP (see below). Pressing **FULL** in the top-right corner of the quadpanel temporarily removes all quadpanels, moves the Master Control Bar to the left edge of the screen, and displays the panel.

DATSHIP — Ship Data



This panel allows you to review detailed information about each ship in your fleet, one at a time, and allows you to see their overall status. The - and + buttons alongside the ship name (SHIP) at the top of the panel allow you to cycle through all ships.

While much of the information displayed in this mode is identical to that displayed in DATFLT, there is additional data provided in DATSHIP that is not displayed elsewhere.

REMEMBER! The information displayed in this mode is only as recent as the last update report. If the ship has not reported its status in a while (see DATFLT above), the information may not be accurate!

The three lines at the top of the quadpanel identify the currently selected ship and captain. They contain four readouts:

<i>I.D.</i>	The tan box between the words "SHIP" and "CAPTAIN" lists the mission I.D. number of the selected vessel.
SHIP	The top white bar displays the full name of the selected vessel.
CAPTAIN	The bottom white bar displays the name of the selected vessel's captain.
GROUP	If the indicated ship is a member of a Battle Group, the number of the Group (G01 to G99) is displayed in the tan box next to the word "GROUP." Group Leaders are indicated by highlighted (white) backgrounds.

Below these readouts is the indicated ship's technical data display, which lists parts, system damage, bulk matter stores and missile inventory:

<i>System I.D.'s</i>	Located to the left side of the quadpanel, these three-letter abbreviations indicate the nine primary systems on the selected ship.
<i>Part Numbers</i>	These readouts display the part numbers for each system, identified by the <i>System I.D.'s</i> , of the currently selected ship.
<i>System Status Meters</i>	Below the <i>Part Numbers</i> are meters that measure the operational capacity of each of the selected ship's systems. These function identically to the <i>Sys Stat Meters</i> on DATFLT, but also include a meter to measure your ship's bulk matter stores.
MISSILE INVENTORY	The nine readouts on the right side of the quadpanel list how many of each type of missile the listed ship was carrying at the time of the last update. The numbers are listed in black readouts to the left of the missile labels.

Finally, the three readouts at the bottom of the quadpanel show the selected ship's *Crew Statistics*. They display the percentages of the ship's crew that are active, injured, or dead. The greater the number of injured and dead, the less likely a given ship will be able to deal with repairing damage.

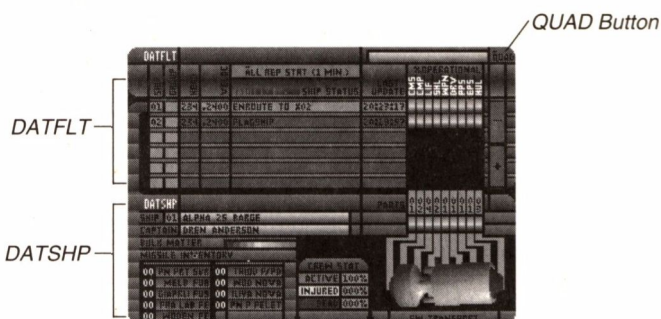
The readouts are color-coded, using the same colors found on the *Crew Status Meters* on the Master Control Bar:

GREEN	active
YELLOW	injured
RED	dead

FULL (U) — There is a full-sized panel which combines the elements of both DATFLT (see above) and DATSHP. Pressing **FULL** in the top-right corner of the quadpanel temporarily removes all quadpanels, moves the Master Control Bar to the left edge of the screen, and displays the panel.

The Combined DATFLT/DATSHP Panel (FULDAT)

Pressing **FULL (U)** on either the DATFLT or DATSHP quadpanel accesses this full-screen panel which combines the elements of both. Every control from the two quadpanels have been duplicated here, and several controls added. Only the controls unique to the full-sized panel are noted below; for information on others see the sections on DATFLT and DATSHP.



The panel is split so that the top half shows DATFLT information, while the bottom half shows DATSHP information. The two subpanels are linked so that DATSHP displays detailed stats for a selected ship on DATFLT. This ship is highlighted on the DATFLT subpanel and is selected by the user.

Selecting a ship for display on DATSHP can be done in two ways: you can click on any of the blue readouts of the ships displayed on DATFLT; or with the keyboard you can use the **↑** and **↓** buttons to move through the list.

Like the DATFLT subpanel, this panel can display data on up to six ships at a time. If more than that number are present, the **-** and **+** buttons allow you to see all of them.

These controls have been modified or added to the DATFLT subpanel:

HEAD	Lists the heading/course of the indicated ship as of its last transmitted status report.
VELOC	Lists the velocity of the indicated ship as of its last transmitted status report.

SHIP STATUS	Lists a more detailed status report than the abbreviated report in DATFLT.
LAST UPDATE	Lists the time when the indicated ship last transmitted a status report to you.

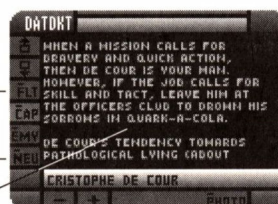
Added to DATSHP subpanel and located in its bottom-right corner is an image of the currently selected ship, displaying its physical form and identifying its class (Transport, Scout, Destroyer, Cruiser, Heavy Cruiser or Dreadnought).

DATDKT — Docket Access

This panel allows you to access a docket of information on all of the “players” in your current mission. The Fleet Commander (in other words, you), each FW Captain, and the Alien and Neutral Race (if any) in the current system each have their own docket.

Docket Selectors

Docket Readout



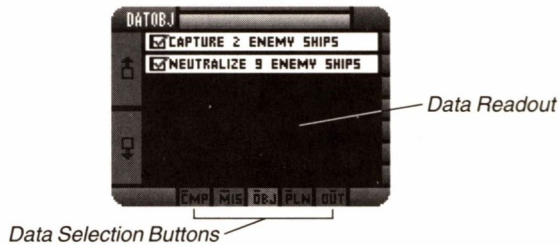
The majority of the quadpanel is filled with a large text display. However, pressing **PHOTO** (P) replaces this with an image of the selected Fleet Commander, Captain or race. Next to images of the Fleet Command and Captains are the I.D. `s of the ship to which they are assigned. The image is displayed as long as the **PHOTO** button is highlighted.

The dockets you can select are:



FLT CMDR (F)	This gives you the docket and picture for yourself, the Fleet Commander.
CAPTAIN (C)	This gives you the docket and picture for each Captain. The - and + buttons next to PHOTO can be used to cycle to different Captains.
ENEMY (E)	This provides you with the docket for the forces opposing you in the current mission, and an image of a member of their race.
NEUTRAL (N)	This accesses the docket and reference image for the neutral alien race in this system.

DATOBJ — Objectives and Intelligence

This quadpanel allows you to review the objectives of the current campaign and mission, find out which of the mission objectives have been accomplished, and study intelligence reports on selected planets and outposts.



The majority of the quadpanel is filled with a standard text display. The five buttons below the display choose which data is accessed:

- CMP** (C) This displays the briefing viewed at the start of the campaign, which provides an overview of the missions that you and your Captains will undertake.
- MIS** (M) This displays the mission briefing, which summarizes your mission objectives and often provides useful strategic and tactical information.
- OBJ** (O) Lists objectives which must be satisfied to successfully complete the mission. Those preceded by a checkmark have been met. Remember to use  and  if there are more objectives than fit on the display. See **Objectives**, below, for a list of all possible objectives.
- PLN** (P) Displays intelligence on selected planets. If any intel reports have been filed on planets in the system, they will appear on a roll-down menu; select one and its report will be filed.
- OUT** (U) Accesses intelligence on selected outposts. If any intel reports have been filed on outposts in the system, you can select them from a roll-down menu.

Objectives

There are many possible objectives in any one mission. A given mission may feature a single objective or various combinations of them. The possible mission objectives are covered in PART II: OVERVIEW.

DATSET — Setup

This quadpanel is split into two sections: the first allows you to save and load preset quadpanel configurations, and the second allows to make temporary adjustments to three game options. These are explained below:

CCSI2 Presets

Options

**CCSI2 PRESETS**

The two buttons at the top of the panel allow you to save and load the arrangements of quadpanels that are stored for fast display by the **QUAD ACCESS** button on the Master Control Bar. As explained in that section, up to four configurations can be stored by right-clicking on that button, but they are forgotten when you end or exit the current mission. These buttons allow you to make changes which will last into future game sessions.

To save the current configurations for later use, press **SAVE PRESETS (S)**. If you have made changes to the **QUAD ACCESS** configurations and wish to return to the saved ones, press **RELOAD PRESETS (R)**.

OPTIONS

The three buttons at the bottom of the panel allow you to make temporary changes to game settings. All three of these features are normally addressed via the **CONFIGURE** screen (see APPENDIX VIII: GAME CONFIGURATION), but the buttons allow you to make adjustments in the middle of a game. These changes are not remembered when you end or exit the current game. For each button, the readout on the right displays its current status.

AUTO TIME DECREMENT (D)

This button lets you set a speed for the Ship`s Chrono that will automatically be engaged if a potential hostile enters within sensor range of your ship. Without this function, you might set course for a distant area and speed-up time for the duration of the trip, only to encounter an enemy along the way and be attacked and destroyed before being able to respond. Set **AUTO TIME DECREMENT** to a speed at which you feel comfortable engaging an enemy, and you can cross great distances safely at any time-speed. This option has six settings: X16, X8, X4, X2, X1 and OFF.

CCSI2 A.N.D.I. VOCALS (V)

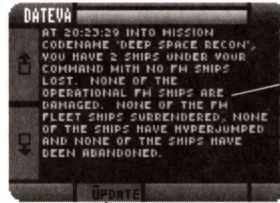
This button lets you turn the voice of your ship`s computer on and off. A.N.D.I. vocals are only available to users with compatible sound cards.

SOUND FX (X)

This button lets you turn the game's digitized sounds effects on and off.

DATEVA — Evaluation Report

This quadpanel produces a computer evaluation of your mission performance at the point at which it is accessed. The evaluation report includes the following statistics:



Computer Evaluation

Evaluation Update

- Total elapsed mission time
- Number of active FW ships
- Number of FW ships destroyed during the mission
- Number of FW ships damaged during the mission
- Number of FW ships that have surrendered
- Number of FW ships that have hyperjumped
- Number of FW ships that have been abandoned
- Number of Enemy ships destroyed
- Number of Enemy ships captured
- Number of Enemy ships known to be operational*
- Number of Enemy outposts remaining
- Number of Enemy outposts captured by FWSF marines
- Units of Enemy cargo captured
- Percentages of FW personnel surviving, killed and injured during the mission
- Performance index/mission score

*When playing in anything other than Recruit mode, there may be ships in the system beyond your telemetry sources, and thus unknown to you.

While the quadpanel is displayed, you can get a current report by pressing **UPDATE (U)**, located at the bottom of the screen.

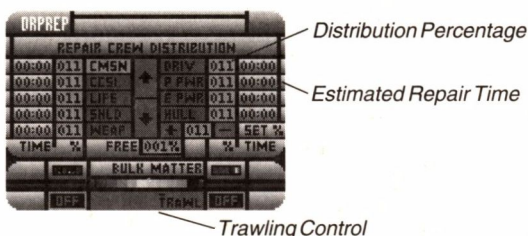
When a mission ends, successfully completed or not, a final mission evaluation similar to this one is displayed.

DOCKING/REPAIR PANELS

Four distinct tasks fall under the heading of DOCKING & REPAIR: repair systems; ship towing; docking with outposts and transfer of cargo. Each is given its own quadpanel, which are detailed below.

DRPREP — Repair Systems

This panel lists the operational capacity of each system of your ship (and *only* your ship) and allows you to distribute percentages of your total repair capacity to each system, allowing you to prioritize your repair efforts.



The nine blue buttons located to either side of the \uparrow and \downarrow buttons indicate, via abbreviations, your ship's primary systems. The readouts next to each button show the percentage of repair capacity devoted to repairing that system. Naturally, the sum total of all nine readouts cannot exceed 100%.

The FREE readout below these systems displays the total percentage of damage control personnel currently unassigned. If this value reads 000% you'll have to lower one or more of the nine readouts before you can add any personnel to a given system.

The default settings for this mode are for each system of your ship to have 11% of the repair crews assigned to them, with 1% left free.

The *Time Readouts* to the side of each percentage measure the amount of time expected to bring each system to 100% operating capacity, considering its current capacity and the percentage of repair crews assigned to it. Naturally, assigning more crews to a system decreases the time needed to repair it. If a readout shows 00:00, then the system is either fully functional or completely destroyed.

IMPORTANT: Fully-destroyed systems, indicated when their *System Status Meter* on the Master Control Bar is completely black, can only be repaired at an appropriately equipped outpost.

Operation

Using this panel is simple. First you must select one of the systems for adjustment, either by using \uparrow and \downarrow or by clicking on one of the blue buttons. The currently selected system will be highlighted.

Then, press the + and - buttons/keys to change the percentage of damage control assigned to the system; remember you must have a percentage available in the FREE readout to increase this. As with many readouts, keyboard users press the + or - keys once to start increasing or decreasing, and again to stop.

Mouse users can quickly assign all available crews to the current system by right-clicking on +, and take all crews away from that system by right-clicking on -.

Bulk Matter / Trawling

Your ship does not carry any repair supplies in its stores; instead, it uses matter-replication technology to create the needed equipment from an on-board supply of **bulk matter**.

Naturally, this supply is not infinite, and a ship who suffers a high amount of damage will need new matter to replenish its stores. This is found by **trawling** through asteroid fields. Pressing the **TRAWL** (T) button activates your ship's trawling systems, which take asteroids and debris floating through nearby space and convert it into usable material. Naturally, trawling is only fruitful when in an asteroid field, and the higher the field's density the more matter you will collect.

The major drawback to trawling is that your ship's shields must be **lowered** for the matter to be brought aboard. This leaves you vulnerable to enemy attacks, a situation complicated by fact that your ship's scanners are less effective while in an asteroid field (see NAVMAP). If you try to trawl while shields are up, the systems will not engage.

The two lights to either side of the **TRAWL** button indicate the system's current status.

DRPTOW — Towing Systems



This quadpanel allows you to use your ship's tractor beam emitters to "grab" an FW ship and tow it, although at a greatly diminished speed. The panel consists of three sections; the Target Lock and Meters; the Mass/Velocity Graph; and the **TRACTOR BEAM** button.

These controls are detailed below:

Target Lock and Meters

To activate your ship's tractor beam, you must first tell the towing systems to target a specific FW ship. Pressing **LOCK ON** (L) activates a roll-down menu listing all FW ships in the system; select one and the tractor beam emitters will rotate to aim at it.

When a target is selected, the readouts below **LOCK ON** will display its ship I.D. and full name. Additionally, a set of colored boxes below these readouts will act as *System Status Meters* for the towed ship, so you may view its status while towing. The meters work identically to those on the TACFIR panel, showing operational capacity with colors from green (100%) to yellow red (low %) to black (completely destroyed).

NOTE: While you can target any FW ship in the system, you can only tow vessels that are within **8,000** kilometers of your ship.

Mass/Velocity Graph

When a target has been selected (whether it is actually towed or not), this graph becomes active to show the maximum velocity possible while towing that ship. This needs a little explanation:

The relationship between the **mass** of the ship being towed and the **velocity** at which you and that ship may travel while towing is an **inverse relationship**. This means that the greater the mass, the slower the maximum towing velocity (and vice versa). The purpose of the *Mass/Velocity Graph* is to show this relationship both visually and numerically.

The readout at the top of the graph, TARGET MASS POINTS, is an index (or relative indicator) of the towed ship's mass. This index is shown visually on the graph as an orange-yellow arrowhead on the multicolored scale, known simply as the *Mass Pointer*.

A line (known as the **lever**) is drawn down from the *Mass Pointer*, through the **fulcrum** in the center of the graph, and to the scale below it. This scale measures velocity, and the point where the lever passes through it is marked with a green arrowhead known as the *Velocity Pointer*.

By looking at how the lever passes through the two scales, you can see that as mass increases and the top end of the lever moves further to the right, the bottom end moves to the left and slower and slower speeds are allowed. This is the essence of the inverse relationship between mass and velocity.

The maximum towing velocity is shown in the MAX TOW VELOCITY readout near the bottom of the graph. The readout below it shows your CURRENT VELOCITY, so you can see whether your current speed will be affected by turning on the tractor beams.

TRACTOR BEAM (T)

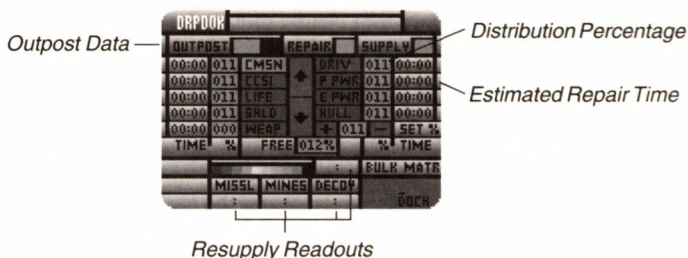
This button actually turns on your ship's tractor beams. If you activate the tractor beams while traveling at a greater velocity than the MAX TOW VELOCITY, your ship will automatically decelerate to the maximum towing speed.

NOTE: The maximum range of your ship's tractor beam is 8,000 kilometers. If you're not within that distance of the selected target, the beam will not activate.

Finally, the indicators to either side of the **TRACTOR BEAM** button show the status of your towing systems.

DRPDOK — Docking Systems, Outpost Repair & Resupply

This quadpanel allows you to dock with outposts, prioritize their repair teams, and oversee the replenishment of supplies. It is broken down into four sections: the Outpost Data Readouts; Outpost Repair Controls; Resupply Readouts; and the **DOCK** button. Each section is explained below:

*Outpost Data Readouts*

In order to dock with an outpost, it must be in the currently selected target lock (see TACFIR or TACMAN for details on doing this). The readouts along the top of the quadpanel identify the Outpost selected in the current target lock, if one is selected there.

The leftmost item, OUTPOST, contains two pieces of data. The tan readout displays the ID of the selected outpost, given for reference. The black readout shows the outpost's alignment, which can be one of three two-letter codes: "FW" for Federated Worlds, "EN" for Enemy and "NE" for Neutral.

NOTE: You can always dock at FW outposts, but you can only dock at Neutral Outposts that give you permission. Neutral Outposts that deny docking access and all Enemy Outposts must be **boarded** first (see TACMAN for details).

The two readouts to the right of OUTPOST display two-digit numbers that rate the outpost's capabilities for REPAIR and SUPPLY. Each system on your ship has a part number, and each of those parts has an associated two-digit *Sophistication Rating* (see

APPENDIX III: THE FW FLEET for parts lists). If the *Sophistication Rating* is greater than the REPAIR rating of the selected outpost, then you will not be able to repair it there.

IMPORTANT: If any systems on your ship have been *completely destroyed* in a battle (so that their *System Status Meter* on the Master Control Bar has gone completely black), then an Outpost is the **only** place where it can be repaired. This makes an outpost's REPAIR and SUPPLY ratings even more important.

Missiles also have *Sophistication Ratings*, and if your on-board missiles have higher ratings than the outpost's rating in SUPPLY, then it will not be able to restock them.

Outpost Repair Controls

This section allows to set priorities for the Outpost's own repair teams, which will begin work on your ship as soon as you have docked. These teams work separately from your ship's repair teams, so you can assign them different priorities than those on the DRPREP quadpanel.

These controls work identically to those on the DRPREP quadpanel, but with one important difference. When you are **DOCKED** with an outpost (see below), if one of your ship's systems is too sophisticated for the Outpost to repair (see above) its controls will be turned to *gray* and will not be accessible. This indicates that you will have to repair the system using your ship's own repair crews; if the system is completely destroyed, you will have to find a more sophisticated outpost.

For information on operating these controls, see the section on the DRPREP quadpanel.

Resupply Readouts

The four time readouts at the bottom of the quadpanel tell you the mission time when resupply of missiles, mines, decoys and bulk matter will be complete. For your reference, a meter which measures your bulk matter stores is also displayed here.

NOTE: Each particular missile type will only be resupplied if its *Sophistication Rating* (see APPENDIX III: THE FW FLEET) is lower than or equal to the outpost's rating in SUPPLY.

Settlement-type outposts, because they are not military in nature, are incapable of resupply. When you dock at one of these outposts, these readouts will read 00:00 and no resupply will occur.

DOCK (D)

Activating this button when your ship is under 1,000 kilometers range from the currently selected outpost causes you ship to halt and a docking sequence to be initiated. Any repairs and resupplying that the outpost is capable of (see above) will begin.

IMPORTANT #1: You must be within 1,000 kilometers of an outpost to dock with it; otherwise no action will occur.

IMPORTANT #2: You can only **DOCK** with FW outposts, and Neutral outposts that have given you permissions. Unfriendly Neutral and Enemy Outposts must be **boarded** (see TACMAN for details).

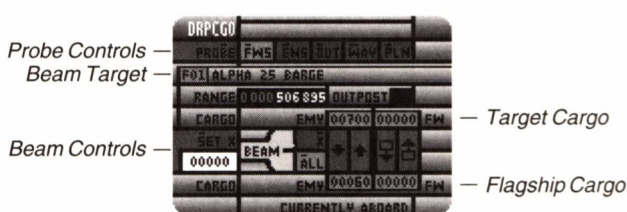
While you are docked the tactical maneuvering controls and both fire buttons are disabled (because firing your weapons within docking range of an outpost is very dangerous). While docked, you can switch targets, relock all target slots, adjust weapons settings, etc., but you cannot maneuver or fire.

If you access NAVHLM and set a course while docked with an outpost the docking is automatically aborted.

If you break off a docking maneuver before repairs and resupply are completed, you may end up with unfinished repairs and possibly none of the supplies the outpost could have provided (if any).

DRPCGO — Cargo Transfer

This quadpanel allows you to transfer cargo between the flagship and other vessels and locations. It is made up of two sections: the Probe Controls; and the Beam Controls.



What follows is a breakdown of those sections:

Probe Controls

Six buttons and four readouts control the probe systems that target your ship's teleportation systems on a particular ship, outpost or location. Each is explained below:

PROBE (B)

At the top-left of the quadpanel, this button activates the cargo probe system to identify and target a particular ship, outpost or location. Pressing **PROBE** activates a roll-down menu listing all items of the chosen type (see next five items); select an item and its stats will be displayed in both the readouts in this section and the *Target Cargo Readouts* in the *Beam Controls* section.

NOTE: While any item on this menu can be targeted, only targets within **500** kilometers are suitable for beaming.

The following five buttons select which type of target can be selected by the **PROBE** button.

FWS (F)	Selects FW ships.
ENS (E)	Selects Enemy vessels.
OUT (O)	Selects Outposts (of any type: FW, Enemy or Neutral)
WAY (W)	Selects Waypoints.
PLN (P)	Selects Planets.

When a target is selected with **PROBE**, the following four readouts are activated:

ID and Name

The tan readout below the **PROBE** button displays the target's I.D. number, and the white bar readout to its right shows its full name.

RANGE

To the left and below *I.D. and Name*, this readout shows the range to the target. If it exceeds 500 kilometers, beaming to and from the target is impossible.





OUTPOST

To the right of **RANGE**, this readout displays the type of outpost targeted if one is selected.

NOTE: You can only beam to and from outposts when you have their *permission*. This means that to beam cargo between a hostile Neutral outpost or Enemy outpost, it must first be boarded (see TACMAN for details).

Beam Controls

Once a target has been selected (see above) and is within 500 kilometers, beaming can begin.

Quick Operational Overview — View the readouts above and below the BEAM buttons to see how much FW and Enemy (EMY) cargo is aboard the target and CURRENTLY ABOARD your ship. To choose a specific amount of cargo to transfer, press **SET X** (S) and enter in the number of units you want, and then press **X** (X) to select that beaming method. To automatically beam as much of the cargo that will fit in your or the target's cargo bays, press **ALL** (A). The  and  buttons transfer enemy cargo between the ships, while  and  transfer FW cargo, both as indicated by their location and orientation.

The controls for beaming cargo are detailed below:

Target Cargo Readouts

Located below the OUTPOST readout of the *Probe Controls*, these two readouts show the amount of both Enemy cargo (indicated by the word "EMY") and FW cargo stored within the target. These are the amounts of cargo available for beaming *from* the target.

NOTE: A target's cargo can only be identified if it located within 10% of your ship's sensor range (see NAVSEN for details). If the target is beyond that range, these readouts are grayed out and beaming is impossible.

These readouts are matched by the CURRENTLY ABOARD readouts located directly below them, so that cargo can be seen beaming between the target and your ship.

Beam Increment Buttons

The two blue buttons to the left of and below the *Target Cargo Readouts* select whether cargo is transferred incrementally (in groups of units at a time) or all at once. The top button, **X** (X), selects an increment that is chosen by the **SET X** (S) button (see next item). The bottom button, **ALL** (A), chooses to transfer as much of the selected cargo as will fit in the destination cargo bays at once. Only one of these buttons can be highlighted at a time.





Neither of these buttons actually initiate beaming; that task is handled by the *Beam Transfer Buttons* (see below).

SET X (S)

Located to the left of the *Beam Increment Buttons*, this button alters the increment by which cargo is transferred between the ship and the target using the **X** button (see previous item). The white readout tucked underneath this button indicates the currently selected increment. Pressing **SET X** allows you to enter a new increment from 0 to 99999 units.

Beam Transfer Buttons

These four narrow buttons, located between the *Target Cargo Readouts* (see above) and the CURRENTLY ABOARD readout (see next item), actually initiate beaming cargo to or from your ship. They operate in two modes (see *Beam Increment Buttons*): if **X** is active, then each press of a button will transfer an increment of cargo units set by the **SET X (S)** command. If **ALL** is active, all cargo that can fit in the destination vessel/location's cargo bays will be transferred with one push of a button.

The buttons are easily identified. The  button transfers Enemy cargo **to** the target, while the  button transfers Enemy cargo **from** it. Meanwhile,  transfers FW cargo **to** the target, and  transfers FW cargo **from** the target.

REMEMBER: If you are not within **500** kilometers of the target, beaming is impossible and these buttons will not work. You will be notified when this occurs.

CURRENTLY ABOARD

Located at the bottom of the panel and directly below the *Beam Transfer Buttons* (see previous item), this pair of readouts shows the amount of both Enemy cargo (indicated by the word "EMY") and FW cargo stored within your ship's cargo bays. These are the amounts of cargo available for beaming *to* the target.

These readouts are matched by the *Target Cargo Readouts* located directly above them, to show cargo being beamed between your ship and the target.

EMERGENCY SYSTEMS PANELS

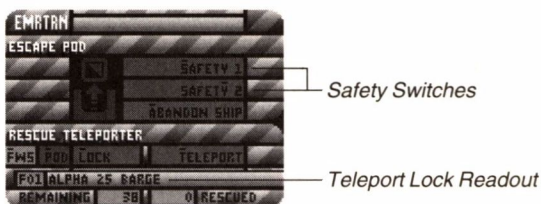
When your ship is attacked by Enemy ships or outposts, a number of catastrophic events may occur which you may not be able to manage alone, if at all. The quadpanels in this section provide responses to these events, broken down into five categories:

EMRTRN	Emergency Crew Transport
EMRDES	Self-Destruct
EMRCOM	Emergency Communications
EMRTHR	Emergency Thrusters
EMRPAN	CCSI2 Panel Status Report

On the pages that follow are detailed descriptions of each of these quadpanels:

EMRTRN — Emergency Crew Transport

This quadpanel allows access to two systems: escape pods, in case your ship is unable to defend itself and its crew; and a rescue teleporter to evacuate crews from other, heavily-damaged FW ships. Each system is described below:

**ESCAPE POD**

If your ship has taken such damage that it is unable to defend itself, you may want to evacuate your crew via the escape pod system. These "lifeboats" are launched on a sixty-second countdown, and will carry yourself, all active crew and as many injured crewmembers as can be moved to the pods in those sixty seconds before launch.

To abandon ship, you must first press both the **SAFETY 1** (S) and **SAFETY 2** (Y) interlocks. Then, pressing **ABANDON SHIP** (A) starts the 60-second countdown. This button changes to **ABORT** (A) while the timer counts down, and can be used to abort the launch at any time. Launching escape pods effectively ends the mission, since you no longer have ship to command. The game will end immediately after ejection.

RESCUE TELEPORTER

Every FW ship is equipped with a last-ditch, emergency crew teleportation system. The system has two parts: a transmission system which keeps track of the location of all crewmembers on each ship and rescue pod, in preparation of beaming them at a moment's notice; and receiving batteries which can capture the matter-energy beam transmitted by another ship, and store it for reintegration after the mission ends.

NOTE: The receiving batteries of the FW Rescue Teleporter use highly complex data- and particle-compression techniques to store the matter-energy patterns of thousands of people in a space the size of a powered fleen. Because of this complexity, reintegrating teleported crew members can only be done with devices so power-draining and expensive that they are not installed aboard regular FW combat ships. In other words, there is no way to reintegrate teleported crew until after the end of the mission.

This section of the quadpanel lets you receive teleported crew from other FW ships or rescue pods. To do this, you must first use the two leftmost buttons to select the type of transmitter: either **FWS** (F) for FW ships, or **POD** (P) for escape pods.

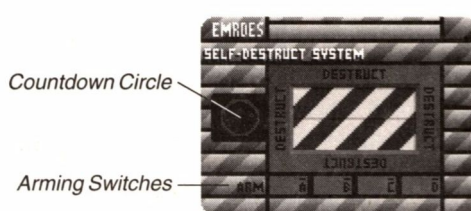
Then, press **LOCK** (L) and a roll-down menu listing all FW ships or pods will appear; select the target of your choice and its I.D. and name will appear in the readouts below.

NOTE: You can **LOCK** onto any FW ship or pod you like, but you will only be able to beam crew aboard if the target is within **500** kilometers of your ship. (Use NAVSEN to check your range.)

When you have locked onto the proper ship or pod and are within 500 kilometers of it, press **TELEPORT** to activate the target's transmitter. Crew will be beamed over immediately. The numbers of crew remaining and rescued are indicated at the bottom of the quadpanel.

EMRDES — Self-Destruct Mechanism

If your ship sustains so much damage that it cannot move or complete its mission, or if it is about to be destroyed by hostile ships, you can "take yourself out" of the game by self-destructing your flagship. This quadpanel accesses the your ship's self-destruct mechanism.



Operation is extremely simple, but not one-step. To activate the destruct sequence you must press/highlight all four buttons at the bottom of the destruct controls (**A**, **B**, **C**, and **D**). The striped panel will then pop open, and if you push the recessed **DESTRUCT** (R) button, the mechanism's 15 second countdown will start and be displayed in the red circle on the panel's left side.

To halt the destruct sequence, use the **ABORT** (R) button at any time prior to the destruct sequence countdown reaching 5 seconds.

5 seconds is critical, because the destruct system works by creating a feedback loop in the drive and power systems of your ship. It takes ten seconds for this power feedback to reach critical level, and, once this level has been achieved, the imminent explosion cannot be aborted.

When a starship self-destructs, the energy released will: instantly destroy any ships within a primary blast range between 0.1 and 1 million kilometers, depending on your ship's PPS (Primary Power System); and cause damage ranging from minor to critical within a radius as large as 26 million kilometers. The specific radii depend on the part number of your PPS system; see APPENDIX III: THE FW FLEET for the actual stats.

Self-destruction can be a valid tactical move — if you time it just right, you might take some of the enemy ships out with you. Just watch out for your own ships!

EMRCOM — Emergency Communications

If your communications system has been damaged or destroyed and you require assistance from another ship, this quadpanel allows you to send three types of messages on an emergency channel. This channel is automatically received by all FW ships in the system.



Emergency Messages

The three messages and their effects are:

A) REQUEST TOW

When transmitted every FW ship will converge on your ship, and the first one there will tow you the location indicated by the *Navpoint* on the NAVMAP quadpanel. This allows you to request a tow to any point in the system.

If you need to be towed to an outpost, just use **SET NAV** on the NAVMAP to set the *Navpoint* to within 1,000 kilometers of the outpost and transmit this message.

B) REQUEST ASSIST

When transmitted some or all FW ships in the system will intercept your ship and retaliate against any enemy ship that is attacking you.

C) REQUEST CREW EVAC

When transmitted all FW ships will converge on your ship, and the first one there will begin teleporting you and your crew out of danger and into its receiving batteries.

IMPORTANT: As explained in the section on the EMRTRN quadpanel, crewmembers who are teleported with this system cannot be reintegrated until the mission is over. For this reason, requesting crew evacuation will end the current mission.

LAST MESSAGE and TRANSMIT TIME, the two readouts at the bottom of the panel, display for your reference the last message sent and the time at which it was transmitted.

EMRTHR — Emergency Thrusters

This quadpanel allows you to access your ship's emergency thrusters, which can only be used when your ship's drive systems are heavily damaged or destroyed. You will be able to set any destination you want, but it will take you a very long time to get there.



Thruster Destination

To access emergency thrusters, press one of the four buttons across the center of the panel. The first three buttons will prompt you to select a specific destination from a roll-down menu. The buttons are:

- | | |
|----------------|---|
| OUT (O) | Sets an outpost, chosen from a roll-down menu, as your destination. |
| WAY (W) | Sets a waypoint, chosen from a roll-down menu, as your destination. |
| PLN (P) | Sets a planet, chosen from a roll-down menu, as your destination. |
| NAV (N) | Sets the <i>Navpoint</i> , chosen from the NAVMAP panel, as your destination. |

NOTE: If your drive systems are functioning adequately, these buttons will be grayed over to prevent access.

Once a destination is set, its I.D. number and name will be displayed in the tan box and white bar below the four buttons. The thrusters will engage, and the two readouts in the bottom-right corner will indicate your current **HEADING** and **VELOCITY** over the course of the trip.

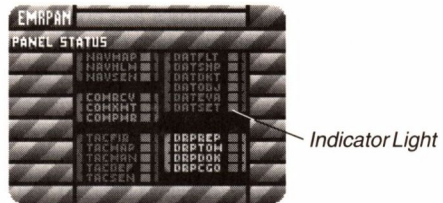
NOTE: The **VELOCITY** at which your emergency thrusters will push you depends on the mass of your ship: the heavier your ship is, the slower it will travel. (Mass can be calculated by totaling the *Mass Points* of each of your ship's parts; see APPENDIX III: THE FW FLEET for these stats.) In every situation this velocity will be a very small fraction of your normal velocity.

The readout in the bottom-left corner, **E.T.A.**, indicates the projected time at which you will reach your destination. As explained above, your emergency thrusters push you at a very slow rate; therefore your **E.T.A.** may be **hours** in the future.

If you want to deactivate emergency thrusters at any point along the way, you may do so by pressing **HALT** (H).

EMRPAN — CCSI2 Panel Status Report

Each of the panels that make up the CCSI2 interface can be made inoperative when the ship is hit, either through damage to the ship's computer or to the systems they control. When your ship gets damaged, this quadpanel will show you the operating status of all of the panels.



The large readout at the center of the panel color-codes and groups the quadpanels by their categories: Navigation, Communications, Tactical, Data Retrieval, Docking/Repair and Emergency Systems. Next to each panel's name is an indicator light which glows **green** when the panel is operative, and flashes **red** when it is inoperative.

Panels are restored to full operation by two things (one or both of which may be appropriate in any given case): repairing the ship's computer, or repairing the system that the panel controls.

Appendix I: The Fleet Commander

Fleet Commander characters are created by you, the user, and act as your alter-ego in the game. You can create as many Fleet Commanders as you like, although playing consistently with one or two will probably increase the rate at which promotions are achieved.

NOTE: If your Fleet Commander is killed in a campaign the character is *not* "offed" (erased) from the disk. The mission in which he was killed is simply logged as a "mission loss" in the character's stats, and the campaign reverts back to the last saved position.

Your overall objective is to advance your Fleet Commander. This is accomplished by successfully completing campaigns, which raises the total score for the Commander. When certain scores are reached, the Commander is promoted (see "Scores" below).

When a game has been started, the Fleet Commander chosen for the game is removed from the "available" list, and his/her name is followed by the name of the game to which he/she has been assigned. Until the game in question is completed or deleted, that Commander will not be usable. This is to prevent the character from being used in multiple games at the same time, which would cause problems when the character completed the campaigns. After all, how could anyone command two Flagships in two different locales at the same time?

Creating Commanders and Importing Others

From the Fleet Commander Builder panel you can create, examine and delete Fleet Commanders characters (this is covered in detail in the Builder manual under "Fleet Commander Builder"), as well as import **Breach 2** Squad Leaders as Commanders.

All Fleet Commanders are stored in a file called RULES2.CMD. It is possible to *import* other RULES2.CMD files and add the Commanders in that file to your own list. See APPENDIX V: IMPORTING AND TRANSFERRING DATA for details on how to import .CMD files.

WARNING! Deleting or overwriting the RULES2.CMD file erases *all* Fleet Commanders you have created.

Character Stats

Each Fleet Commander has his/her own set of statistics. There are two categories of stats for each Commander, 'Mission' and 'Squad Level'. Mission stats are related to the commander's performance in **Rules of Engagement 2** campaigns. Campaign stats are:

NAME

The Commanders name.

RANK

The Commander's current rank.

SCORE

Each campaign attempted results in a score, which is added to the total score from all campaigns attempted by the Commander.

ATTEMPTED

The total number of missions the Commander has attempted so far.

BATTLE TIME

The total time the Commander has spent in missions; listed in hours.

VICTORIES

The total number of missions the Commander has successfully completed.

LOSSES

The total number of missions the Commander has failed to complete.

SHIPS LOST

The total number of Federated Worlds starships lost in battle in missions commanded by the Commander.

KILLS

The total number of enemy vessels captured/destroyed in missions led by the Commander.

The Squad Level stats relate to the boarding of enemy ships and outposts. The first six stats (encumbrance, base moves, bonus moves, accuracy, cracking, and detecting) come into play only if the Interlocking Game System (IGS) is used to access **Breach 2** or **Breach 3** when boarding enemy ships and Outposts. These stats relate specifically to **Breach 2** and **Breach 3** action and have no effect in **Rules of Engagement 2** itself. (See APPENDIX VII: INTERLOCKING GAME SYSTEM for more information about the IGS system)

The remaining six Squad Level stats are affected by both **Breach 2**, **Breach 3**, and the built-in marine-combat routines of **Rules of Engagement 2**. These stats are:

SQUAD BATTLES

The total number of squad battles the Commander has attempted thus far.

SQUAD VICTORIES

The total number of successful squad battles the Commander has led thus far.

SQUAD LOSSES

The total number of unsuccessful squad battles the Commander has led thus far.

SQUAD TIME

The total time (in minutes) the Commander has spent leading squads.

SQUAD LEVEL KILLS

The total number of enemies killed by the Commander (himself) in squad missions.

MARINES LOST

The total number of FWSF marines under the Commander who were killed in squad battles.

Score

At the end of each campaign the Commander receives a campaign score, which is appended to the character's total score.

The campaign score is a total of the mission performance index given for each mission in the campaign, plus a bonus score for successful completion. For instance, sustaining crew casualties, damage, and destruction of Federated Worlds ships, and enemy takeovers of FW Outposts all have negative effects on the mission score. On the other hand, if the Commander's forces destroy enemy ships, or capture enemy ships and Outposts, the score is effected positively.

HINT: Capturing enemy vessels yields more points than simply destroying them.

The performance index for each mission is calculated as follows:

- Plus For each enemy ship destroyed, 5 points for transport, 10 for scout, 15 for destroyer, 20 for cruiser, 25 for heavy cruiser, 30 for dreadnought
- Plus For each enemy ship captured, 10 points for transport, 20 for scout, 30 for destroyer, 40 for cruiser, 50 for heavy cruiser, 60 for dreadnought
- Plus For each outpost captured, the value of the outpost's repair sophistication
- Plus One point for every 20 units of enemy cargo captured

- Minus For each FW ship destroyed, lost, or abandoned, 10 points for transport, 20 for scout, 30 for destroyer, 40 for cruiser, 50 for heavy cruiser, 60 for dreadnought
- Minus For each FW ship damaged, 2 points for transport, 4 for scout, 6 for destroyer, 8 for cruiser, 10 for heavy cruiser, 12 for dreadnought
- Minus One point for every 20 FW personnel killed

Promotions

A Fleet Commander is promoted in rank when his/her/its score reaches certain levels. Promotions are based on score. Ranks range from Lieutenant Commander to Fleet Admiral. The following is a list of all possible ranks, from lowest to highest:

<u>Rank</u>	<u>Minimum Score</u>
Lieutenant Commander	0
Commander	1,500
Captain	3,000
Commodore	5,000
Fleet Commodore	8,000
Sector Commander	11,000
Quadrant Commander	18,000
Rear Admiral	27,000
Vice Admiral	34,000
Admiral	41,000
Fleet Admiral	50,000

Commendations

In addition to being promoted through the ranks, your Fleet Commanders can also receive commendations for their actions. There are six medals that can be awarded, and any commander can have multiples of each.

The medals are displayed when you examine a Fleet Commander from either the Fleet Commander Builder or when you check the Commander's docket from the DATDKT panel within the game.



FW CROSS

Awarded when, in a single mission, at least 3 enemy Outposts or 8 enemy ships are captured or destroyed.



DISTINGUISHED SERVICE

Awarded once every 40 enemy ships losses.



PURPLE HEART

Awarded when, upon returning from a mission, the Fleet Commander's ship suffered more than 50% crew loss.



DISTINGUISHED CAREER CLUSTER

Awarded every 20 victorious missions.

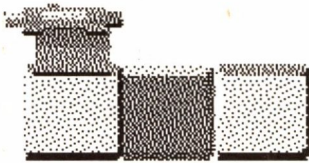


FW MEDAL OF HONOR

Awarded for every 5,000 points of score.

Appendix II: Opposing Forces

Fleet 1 - UDP Vessels



UDP transports are usually slow with limited armament capability. Shielding is usually low to moderate.

Class: Transport
Length: 390 Meters
Beam: 247 Meters
Draught: 196 Meters

Crew Complement: 26
Manufacturer: Dorner-Chapman
Classification: Goods and Passenger Transport
Cargo Capacity: 700 units



UDP scouts are usually extremely fast. Shielding is usually light. Can carry advanced COMSEN systems, but unlike FW scouts, UDP scouts have no stealth capability.

Class: Scout
Length: 125 Meters
Beam: 41 Meters
Draught: 40 Meters

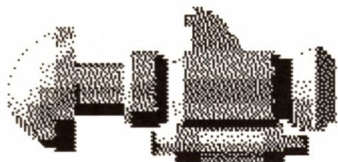
Crew Complement: 53
Manufacturer: Vaccusys
Classification: Research and Exploration
Cargo Capacity: none



Typically moderately fast and maneuverable. UDP Destroyers have a large missile capacity. They can carry very advanced EBW systems. They have a moderate to high shield capacity. COMSEN system capability is moderate.

Class: Destroyer
Length: 125 Meters
Beam: 50 Meters
Draught: 49 Meters

Crew Complement: 79
Manufacturer: DuBois Autoengineering Company
Classification: Warship
Cargo Capacity: 60 units



Typically fast. Average missile capacity and advanced EBW capable. Shields are typically heavy. COMSEN capability is average.

Class: Cruiser
Length: 143 Meters
Beam: 54 Meters
Draught: 67 Meters

Crew Compliment: 84
Manufacturer: GordCon Aero-Astro
Classification: Warship
Cargo Capacity: 80 units



Moderately fast, can carry lots of missiles and advanced EBW's. Shields are typically very heavy. Can carry moderately advanced COMSEN systems.

Class: Heavy Cruiser
Length: 206 Meters
Beam: 137 Meters
Draught: 82 Meters

Crew Compliment: Unknown
Manufacturer: Vaccusys/GordCon Aero-Astro
Classification: Warship
Cargo Capacity: 130 units



Average speed, can carry lots of missiles and advanced EBW's. Shielding is typically moderate. Only dreadnoughts can carry the most advanced COMSEN systems.

Class: Dreadnought
Length: 338 Meters
Beam: 140 Meters
Draught: 125 Meters

Crew Compliment: Unknown
Manufacturer: Classified
Classification: Warship
Cargo Capacity: 210 units

Fleet 2 - Alien Vessels

These transports are usually very slow with limited or no armament capability. Shielding is usually low.

Class: Transport
Length: 431 Meters
Beam: 260 Meters
Draft: 203 Meters

Crew Compliment: 15
Manufacturer: RossiTech
Classification: Goods and Passenger Transport
Cargo Capacity: 700 units



These scouts are usually very fast. Shielding is usually light to moderate. Can carry advanced COMSEN systems, but unlike FW scouts, these scouts have no stealth capability.

Class: Scout
Length: 109 Meters
Beam: 40 Meters
Draft: 38 Meters

Crew Compliment: Unknown
Manufacturer: Harris AstroSys
Classification: Exploration
Cargo Capacity: none



Typically moderately fast and maneuverable, these Destroyers have a large missile capacity. They can carry very advanced EBW systems. They usually have a moderate shield capacity. COMSEN system capability is moderate.

Class: Destroyer
Length: 161 Meters
Beam: 52 Meters
Draft: 47 Meters

Crew Compliment: 61
Manufacturer: RossiTech
Classification: Warship
Cargo Capacity: 60 units



Typically very fast (as fast as scouts when unburdened with cargo and supplies). Average to high missile capacity and advanced EBW capable. Shields are typically moderate. COMSEN capability is average.

Class: Cruiser
Length: 133 Meters
Beam: 68 Meters
Draught: 68 Meters

Crew Compliment: Unknown
Manufacturer: Classified
Classification: Warship
Cargo Capacity: 80 units



Moderately fast, can carry lots of missiles and advanced EBW's. Shields are typically heavy. Can carry moderately advanced COMSEN systems.

Class: Heavy Cruiser
Length: 167 Meters
Beam: 102 Meters
Draught: 87 Meters

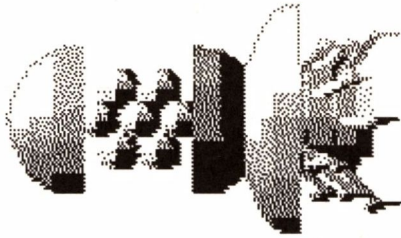
Crew Compliment: Classified
Manufacturer: Classified
Classification: Warship
Cargo Capacity: 130 units



Average speed, can carry lots of missiles and advanced EBW's. Shielding is typically moderate. Only dreadnoughts can carry the most advanced COMSEN systems.

Class: Dreadnought
Length: 234 Meters
Beam: 150 Meters
Draught: 142 Meters

Crew Compliment: Unknown
Manufacturer: Classified
Classification: Warship
Cargo Capacity: 210 units

Fleet 3 - Alien Vessels

These transports are usually moderately slow with limited armament capability. Shielding is usually moderate.

Class: Transport
Length: 372 Meters
Beam: 204 Meters
Draft: 204 Meters

Crew Complement: 34
Manufacturer: Unknown
Classification: Goods and Passenger Transport
Cargo Capacity: 700 units



These scouts are usually extremely fast. Shielding is usually light. Can carry advanced COMSEN systems, but unlike FW scouts, these scouts have no stealth capability.

Class: Scout
Length: 121 Meters
Beam: 46 Meters
Draft: 46 Meters

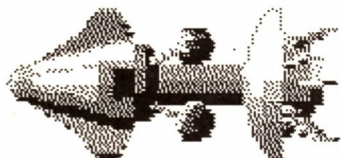
Crew Complement: Unknown
Manufacturer: Unknown
Classification: Research and Exploration
Cargo Capacity: none



Typically fast and maneuverable, these Destroyers have a large missile capacity. They can carry very advanced EBW systems. They have a moderate to high shield capacity. COMSEN system capability is moderate.

Class: Destroyer
Length: 161 Meters
Beam: 102 Meters
Draft: 102 Meters

Crew Complement: 57
Manufacturer: Dixon-Statler
Classification: Search and Destroy
Cargo Capacity: 60 units



Typically very fast (as fast as scouts when unburdened with cargo and supplies). Average missile capacity and advanced EBW capable. Shields are typically heavy. COMSEN capability is average.

Class: Cruiser
Length: 252 Meters
Beam: 142 Meters
Draught: 154 Meters

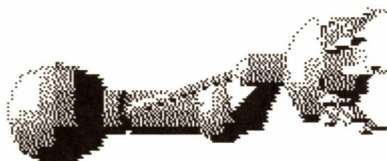
Crew Compliment: 105
Manufacturer: Dixon-Statler
Classification: Exploration and Defense
Cargo Capacity: 80 units



Moderately fast, can carry lots of missiles and advanced EBW's. Shields are typically very heavy. Can carry moderately advanced COMSEN systems.

Class: Heavy Cruiser
Length: 302 Meters
Beam: 213 Meters
Draught: 212 Meters

Crew Compliment: 142
Manufacturer: Unknown
Classification: Warship
Cargo Capacity: 130 units



Average to fast speed, can carry lots of missiles and advanced EBW's. Shielding is typically moderate. Only dreadnoughts can carry the most advanced COMSEN systems.

Class: Dreadnought
Length: 352 Meters
Beam: 200 Meters
Draught: 152 Meters

Crew Compliment: 141
Manufacturer: Classified
Classification: Warship
Cargo Capacity: 210 units

UDP/Alien Parts Lists

The following are lists of parts for the nine different system on board the ships. Each system name is prefaced by a three letter and one letter abbreviation for the system. These abbreviations are used throughout the game.

NOTE: The following information is listed for each part in each system. Most systems have other information that will be described in each section.

RP	The number of resource points associated with the part.			
DP	Damage points the system can incur. The more DP`s, the stronger the part.			
Soph	Sophistication level of the part.			
MP	The number of mass points.			
Size	The ship classes that can utilize the part. Codes are:			
	T	Transport	H	Heavy Cruiser
	S	Scout	R	Dreadnought
	D	Destroyer	A	All Classes
	C	Cruiser		

CMS / M Communications/Sensor (COMSEN) System

#	Type	RP	DP	Soph	MP	Size	Inf	Base	Scan	Drone	Jam	Stealth
1	Enemy Type 1	5	5	25	2	TS	22	38	16	0	0	No
2	Enemy Type 2	10	19	30	1	A	51	62	36	0	0	No
3	Enemy Type 3	20	18	54	1	DCH	43	51	138	0	9	No
4	Enemy Type 4	50	4	78	5	DCHR	85	85	193	0	5	No
5	Enemy Type 5	95	36	94	4	SHR	95	97	212	0	6	No
6	Enemy Type 6	100	21	95	4	SD	87	82	232	0	2	No

Inf	Maximum tolerable interference level
Base	Base signal strength
Scan	Maximum scan radius (in millions of kilometers)
Drone	Maximum number of drones
Jam	Jamming level for enemy communications
Stealth	Stealth capability

CMP / C *Computer System*

#	Type	RP	DP	Soph	MP	Size	GigaOps
1	Enemy Type 1	5	6	33	9	TS	95
2	Enemy Type 2	25	3	39	10	TSD	189
3	Enemy Type 3	45	12	42	16	TSD	479
4	Enemy Type 4	50	11	49	14	TDCH	548
5	Enemy Type 5	60	32	54	19	SDCH	626
6	Enemy Type 6	85	21	76	14	DHR	879
7	Enemy Type 7	95	31	83	21	HR	980
8	Enemy Type 8	105	15	98	18	HR	1,243

Gigaops Determines how much damage the computer can take and still provide operational capability for the ship

LIF / L *Life Support System*

#	Type	RP	DP	Soph	MP	Size	Min Func
1	Enemy Type 1	5	16	47	9	SD	74
2	Enemy Type 2	15	6	57	16	SDC	65
3	Enemy Type 3	30	9	72	13	DCHR	50
4	Enemy Type 4	45	14	81	20	TDCHR	42
5	Enemy Type 5	65	25	84	26	TCHR	36
6	Enemy Type 6	85	16	89	33	TCHR	20

Min Func Minimum damage level at which the system can generate sufficient life support levels to prevent crew injury and death

SHL / S *Shield System*

#	Type	RP	DP	Soph	MP	Size	Energy Blockage			
							1	2	3	4
1	Enemy Type 1	5	35	58	2	TD	2	1	1	2
2	Enemy Type 2	10	31	61	3	TD	4	5	5	5
3	Enemy Type 3	20	36	65	8	TDC	8	8	8	7
4	Enemy Type 4	30	31	72	7	TDC	12	15	15	14
5	Enemy Type 5	40	43	75	14	SDCH	19	16	16	15
6	Enemy Type 6	55	55	83	17	DHR	32	12	12	21
7	Enemy Type 7	60	51	88	22	HR	22	22	22	20
8	Enemy Type 8	80	46	96	21	H	27	25	25	27
9	Enemy Type 9	100	51	98	24	SR	32	36	36	36
10	Enemy Type 10	120	63	99	30	S	41	24	24	37

WPN / W Weapons System

#	Type	RP	DP	Soph	MP	Size	Missile Capacity								EBW	Mine	Decoy	
							01	02	03	04	05	06	07	08				09
1	Enemy Type 1	5	4	42	7	T	0	0	0	0	0	0	0	0	13	0	2	
2	Enemy Type 2	15	4	44	7	TS	0	0	0	0	0	0	0	0	21	0	2	
3	Enemy Type 3	25	12	52	9	S	4	3	1	2	0	0	0	0	15	3	14	
4	Enemy Type 4	35	12	57	9	C	4	3	1	2	0	0	1	0	6	26	4	14
5	Enemy Type 5	50	22	63	12	CH	6	6	2	4	2	0	0	2	0	21	0	0
6	Enemy Type 6	55	21	65	15	DR	6	8	2	4	2	0	0	0	0	29	5	0
7	Enemy Type 7	75	37	79	19	DHR	10	13	8	9	3	2	2	1	8	32	9	20
8	Enemy Type 8	85	45	84	17	DHR	15	19	12	10	7	5	3	2	12	32	9	24
9	Enemy Type 9	110	15	96	9	S	0	0	0	0	0	0	0	0	0	89	18	30
10	Enemy Type 10	140	23	97	27	HR	18	19	18	14	12	7	4	7	12	41	20	16

EBW Strength of EBW beam

Mine Mine capacity

Decoy Decoy capacity

DRV / D Drive System

#	Type	RP	DP	Soph	MP	Size	Max Vel	Accel	Hyper Delay
1	Enemy Type 1	5	6	60	5	TD	0.21	0.013	65
2	Enemy Type 2	10	9	63	8	TD	0.35	0.047	45
3	Enemy Type 3	30	21	71	10	DH	0.49	0.089	261
4	Enemy Type 4	40	32	84	16	TSDC	0.43	0.103	132
5	Enemy Type 5	45	43	74	14	DCH	0.68	0.093	87
6	Enemy Type 6	60	6	88	17	DCHR	0.74	0.013	65
7	Enemy Type 7	75	9	90	19	CHR	0.73	0.047	45
8	Enemy Type 8	80	21	92	22	R	0.87	0.089	261
9	Enemy Type 9	100	32	95	8	S	0.98	0.103	132
10	Enemy Type 10	120	43	97	16	H	0.99	0.132	87

Max Vel Maximum velocity (in light-speed)

Accel Maximum acceleration (measured in light-speed per second per second)

Hyper Delay Delay between activation and the actual jump (in seconds)

PPS / P *Primary Power System*

#	Type	RP	DP	Soph	MP	Size	Efficiency	Blast	Primary
1	Enemy Type 1	5	6	63	5	TSDH	56	3	0.2
2	Enemy Type 2	25	19	72	8	TSDH	72	6	0.2
3	Enemy Type 3	40	13	77	13	TSCHR	80	15	0.7
4	Enemy Type 4	60	23	89	21	TCHR	90	19	0.6
5	Enemy Type 5	110	38	99	18	A	98	23	0.8

Efficiency Relative efficiency of the system at providing ship's power

Blast Area of possible destruction when the system is overloaded by a self-destruct command (in millions of kilometers)

Primary Area of 100% destruction when the power system is overloaded by a self-destruct command (in millions of kilometers)

EPS / E *Emergency Power System*

#	Type	RP	DP	Soph	MP	Size	Efficiency	Replication Rate	Bulk Storage
1	Enemy Type 1	5	23	59	3	TSDH	94	5	65
2	Enemy Type 2	30	30	66	5	TSDH	84	21	140
3	Enemy Type 3	45	33	73	12	TSCHR	93	31	321
4	Enemy Type 4	65	51	79	16	TCHR	87	45	318
5	Enemy Type 5	95	31	88	15	A	85	56	435

Efficiency Relative efficiency of the system at providing emergency ship's power

Replication Rate Relative rate at which the system utilizes bulk matter to repair systems

Bulk Storage Bulk matter storage capacity (in units)

HUL / H *Hull System*

#	Type	RP	DP	Soph	MP	Size	Durability
1	Enemy Type 1	5	38	80	31	SD	26
2	Enemy Type 2	15	52	81	25	TSDH	43
3	Enemy Type 3	35	67	86	38	TDCH	51
4	Enemy Type 4	50	57	88	42	CHR	67
5	Enemy Type 5	75	65	91	60	TCHR	83
6	Enemy Type 6	120	91	93	52	DCHR	96

Durability Relative durability of the hull that determines resistance to damage

Enemy Ship List

The following list describes each of the enemy ships that come with the game.

Name	Class	Flt	CMP	DRV	EPS	HUL	LIF	CMS	PPS	SLD	WPN	MP	RP
A OUTRANCE	SCO	2	01	04	01	01	01	01	01	05	09	098	0220
AGRIPPA	SCO	1	01	09	01	01	01	01	01	05	09	090	0280
AMBHAS	SCO	3	01	04	01	01	01	01	01	05	09	098	0220
ANVIL	SCO	1	01	04	01	01	01	01	01	05	09	098	0220
AQUILIFER	SCO	1	01	04	01	01	01	01	01	05	09	098	0220
ARIDO	SCO	2	01	09	03	01	01	05	02	09	09	114	0490
ARPIA	SCO	2	01	09	03	01	01	05	02	09	09	114	0490
BAHLEES HESI	CRU	1	05	04	04	04	02	02	03	03	05	143	0350
BAHRIS JEHK	HEA	2	04	03	01	03	04	04	05	05	08	139	0450
BAISHLA	SCO	1	01	04	02	01	01	01	01	05	03	100	0160
BECKNESS	TRA	3	01	01	01	02	04	01	01	01	01	078	0095
BEHKIN PRAG	TRA	1	02	02	03	03	05	02	03	02	02	118	0255
BELAK SEHD	DES	2	05	03	01	02	01	04	02	05	08	110	0315
BEZIER	SCO	1	01	09	03	01	01	05	02	09	09	114	0490
BICCKO	SCO	1	01	09	01	01	01	01	01	05	09	090	0280
BINDA	SCO	3	01	09	03	01	01	05	02	09	09	114	0490
BISCIA	SCO	2	01	09	03	01	01	05	02	09	09	114	0490
BOHSOHN PTOR	DRE	2	06	08	05	05	05	05	05	09	08	200	0790
BRASIT KESH	SCO	2	03	04	03	02	02	05	03	05	09	125	0445
CAELIUS	DES	1	05	06	02	02	01	06	02	06	08	121	0435
CARGO POD / AAG TUG	TRA	3	01	01	01	02	04	01	01	01	01	078	0095
CARGO POD / AAJ TUG	TRA	3	01	01	01	02	04	01	01	01	01	078	0095
CARGO POD / K13 TUG	TRA	3	01	01	01	02	04	01	01	01	01	078	0095
CARGO POD / Z11 TUG	TRA	3	01	01	01	02	04	01	01	01	01	078	0095
CATHAR	SCO	1	01	09	03	01	01	05	02	09	09	114	0490
CETRA	DES	1	05	06	02	02	01	06	02	06	08	121	0435
CHEVALIER	SCO	2	01	04	01	01	01	01	01	05	09	098	0220
CLIFEUS	SCO	1	01	09	01	01	01	01	01	05	09	090	0280
COMPAGNO	SCO	2	01	09	01	01	01	05	01	05	09	092	0370
COMPRIGNO	SCO	2	01	09	01	01	01	05	01	05	09	092	0370
CONTAINER LAUNCH BHH	TRA	2	01	01	01	02	04	01	01	01	01	078	0095
CONTAINER LAUNCH KE3	TRA	2	01	01	01	02	04	01	01	01	01	078	0095
CONTAINER LAUNCH LL2	TRA	2	01	01	01	02	04	01	01	01	01	078	0095
CONTAINER LAUNCH OW2	TRA	2	01	01	01	02	04	01	01	01	01	078	0095
CONTAINER LAUNCH PLC	TRA	2	01	01	01	02	04	01	01	01	01	078	0095
CONTAINER LAUNCH PP3	TRA	2	01	01	01	02	04	01	01	01	01	078	0095
CONTAINER LAUNCH RK3	TRA	2	01	01	01	02	04	01	01	01	01	078	0095
CONTUS	SCO	1	01	09	03	01	01	05	02	09	09	114	0490
CRUPTORIX	DES	1	05	06	02	02	01	06	02	06	08	121	0435
DARAK HARA	CRU	1	04	05	05	04	04	03	05	05	05	150	0505
DELPOR PTOR	DRE	2	08	08	05	06	06	05	05	09	08	203	0875
DULAC	SCO	1	01	04	01	01	01	01	01	05	09	098	0220
DUNAS SELK	DES	1	02	01	01	01	01	02	01	01	08	083	0150
ESCRIME	SCO	2	01	04	01	01	01	01	01	05	09	098	0220
FA'ROG PEKT	DRE	2	07	08	05	06	06	04	04	09	07	212	0760
FENOP PEKT	DRE	2	08	08	04	06	05	04	05	09	06	196	0750
FIRET PLEK	TRA	3	03	01	05	02	05	01	01	02	02	104	0260
GALEZ PTOR	DRE	2	07	06	03	05	05	05	05	07	07	199	0680

Name	Class	Flt	CMP	DRV	EPS	HUL	LIF	CMS	PPS	SLD	WPN	MP	RP
GENDARME	SCO	2	01	04	01	01	01	01	01	05	09	098	0220
GERAG PEKT	DRE	1	06	06	03	04	03	02	03	06	06	144	0430
GERMANICUS	SCO	1	01	09	01	01	01	01	01	05	09	090	0280
GILAG KESH	SCO	2	03	04	03	02	02	02	03	10	03	138	0355
GILOG JIHN	HEA	2	05	05	04	03	04	04	05	06	07	166	0540
GISLOS PRAG	TRA	2	03	02	05	03	05	02	05	03	02	137	0405
GOHUS SELK	DES	2	06	06	05	06	04	06	05	06	08	174	0755
HESEL SELK	DES	2	06	03	02	03	01	06	05	06	07	134	0525
HOONIT JIHN	HEA	2	05	03	01	03	04	05	05	05	08	143	0505
HOONIT KESH	SCO	2	05	04	02	02	02	06	03	05	03	121	0365
HOONOR JEHK	CRU	1	05	07	05	06	03	04	04	05	05	170	0580
HOONOR KESH	HEA	2	06	05	02	03	05	05	05	06	08	153	0605
HURUG PLEK	TRA	1	03	01	01	05	04	02	04	04	02	140	0290
JARAT KESH	SCO	2	03	04	03	02	02	06	03	10	03	141	0445
JUKYOP KESH	HEA	1	06	07	05	05	04	05	04	06	07	189	0660
KAHVES HESI	CRU	3	05	05	04	04	04	04	04	03	05	157	0445
KARAF PRAG	TRA	2	04	04	05	05	04	02	05	04	02	158	0470
KATAN PTOR	DRE	1	08	08	03	05	04	04	04	06	06	190	0570
KATAR HESI	CRU	1	04	04	03	03	02	02	03	03	04	127	0290
KATAR JEHK	HEA	1	04	03	01	02	03	02	01	05	05	097	0235
KILAK JIHN	HEA	3	08	03	03	04	04	04	03	05	07	153	0480
KREYSHLA	SCO	1	01	04	01	01	01	01	01	05	02	096	0125
KYUDET PEKT	DRE	3	07	07	03	04	03	02	03	07	08	160	0490
KYUNEL PTOR	DRE	1	07	08	03	06	05	04	03	07	08	190	0640
LAJMAS HESI	CRU	1	05	07	05	06	03	04	05	05	05	167	0630
LANS HESI	CRU	1	05	04	05	05	02	02	04	04	05	167	0435
LENGOOR HESI	CRU	1	05	06	04	04	04	04	04	05	04	163	0465
LEWSEK SEHD	DES	1	06	06	05	03	03	03	05	06	07	152	0565
LIDAN PTOR	DRE	2	07	08	04	06	05	02	04	07	08	198	0640
MADEEN SELK	DES	1	06	05	02	02	02	03	05	06	08	127	0460
MAKAI	SCO	1	01	04	01	01	01	01	01	05	09	098	0220
MARA	SCO	3	01	04	01	01	01	01	01	05	09	098	0220
MARCIUS	SCO	1	01	09	01	01	01	01	01	05	09	090	0280
MARICHI	SCO	3	01	04	01	01	01	01	01	05	09	098	0220
MARTEL	SCO	3	01	04	01	01	01	01	01	05	09	098	0220
MELKOR PTOR	DRE	2	07	06	03	05	05	05	04	07	08	200	0640
MERMAK	SCO	3	01	04	01	01	01	01	01	05	09	098	0220
MERNAK	SCO	3	01	04	01	01	01	01	01	05	09	098	0220
NAMIAN	DES	1	05	06	02	02	01	06	02	06	08	121	0435
NEESEN SELK	DES	2	06	04	01	03	01	04	05	05	08	134	0455
NEHKYEW JEHK	HEA	2	06	07	05	05	05	05	04	06	08	193	0690
NUBAL	SCO	1	01	09	01	01	01	01	01	05	09	090	0280
ORANGE PIRATE BOLTO	TRA	2	01	01	01	02	04	01	01	01	02	078	0105
ORANGE PIRATE KATWO	TRA	2	01	01	01	02	04	01	01	01	02	078	0105
ORANGE PIRATE MAIKO	TRA	2	01	01	01	02	04	01	01	01	02	078	0105
ORANGE PIRATE XEK	TRA	2	01	01	01	02	04	01	01	01	02	078	0105
OUTLAW VESSEL BLAKE	TRA	1	01	01	01	02	04	01	01	01	02	078	0105
OUTLAW VESSEL GRACH	TRA	1	01	01	01	02	04	01	01	01	02	078	0105
OUTLAW VESSEL THOMAS	TRA	1	01	01	01	02	04	01	01	01	02	078	0105
PAVAY KAHGDU	SCO	1	01	04	02	02	01	02	01	05	03	093	0175
PAVAY KAHGHE	SCO	1	03	04	02	02	01	02	01	05	03	100	0215
PAVAY KAHGKO	SCO	1	01	04	01	01	01	01	01	05	02	096	0125
PAVAY KAHGTA	SCO	1	01	04	02	01	01	01	01	05	03	100	0160
PERAW HESIDU	CRU	2	04	05	03	04	04	04	04	05	04	151	0420

Name	Class	Flt	CMP	DRV	EPS	HUL	LIF	CMS	PPS	SLD	WPN	MP	RP
PERAW SELKO	DES	2	03	04	05	03	03	06	05	05	08	151	0580
PERSUM HESI	CRU	1	05	06	05	06	03	04	03	05	05	160	0545
PHALANGE	SCO	1	01	09	03	01	01	05	02	09	09	114	0490
PILUM	SCO	2	01	09	01	01	01	01	01	05	09	090	0280
PIRATE RAIDER BANGAL	TRA	3	01	01	01	02	04	01	01	01	02	078	0105
PIRATE RAIDER KLAITO	TRA	3	01	01	01	02	04	01	01	01	02	078	0105
PIRATE RAIDER MORBUS	TRA	3	01	01	01	02	04	01	01	01	02	078	0105
PIRATE RAIDER YANXO	TRA	3	01	01	01	02	04	01	01	01	02	078	0105
REETAZ KAHG	SCO	2	03	04	03	02	02	02	02	09	03	127	0320
REEYANT SAHD	DES	1	05	03	01	03	03	04	05	01	06	123	0380
RELUS JEHKO	HEA	2	05	03	01	04	04	05	04	05	08	150	0470
RENJER KAHG	SCO	3	03	04	03	01	02	02	03	05	03	128	0265
RITIS JEHK	HEA	3	05	05	04	05	04	05	05	08	10	199	0715
RITIS PRAG	TRA	2	04	04	05	05	06	02	05	04	02	171	0510
SAGUM	DES	1	02	01	01	01	01	02	01	01	08	083	0150
SAZRIT JIHN	HEA	2	08	07	05	06	03	03	05	08	08	174	0720
SCUTUM	SCO	1	01	09	03	01	01	05	02	09	09	114	0490
SERTORIUS	DES	1	05	06	02	02	01	06	02	06	08	121	0435
SHIKDUJ PEKT	DRE	2	06	07	05	04	03	05	04	09	10	179	0730
SITOR SELK	DES	2	03	04	05	03	04	06	05	05	08	158	0595
SOLAR	SCO	2	01	04	01	01	01	01	01	05	09	098	0220
SONG OF JONAH	TRA	1	01	01	01	02	04	01	01	01	01	078	0095
SORR	SCO	3	01	09	01	01	01	01	01	05	09	090	0280
STROMBERG	SCO	2	01	04	01	01	01	01	01	05	09	098	0220
SUKIS HESI	CRU	1	05	07	05	06	06	04	05	05	05	187	0685
SURTIB KESH	SCO	1	03	04	03	01	02	05	03	05	09	131	0435
SYRON HESI	CRU	2	04	06	04	05	04	04	03	04	05	164	0465
SYSTEM CARGO BARGE	TRA	1	01	01	01	02	04	01	01	01	01	078	0095
SYSTEM CARGO BARGE 4	TRA	1	01	01	01	02	04	01	01	01	01	078	0095
SYSTEM CARGO BARGE 5	TRA	1	01	01	01	02	04	01	01	01	01	078	0095
SYSTEM CARGO BARGE 6	TRA	1	01	01	01	02	04	01	01	01	01	078	0095
SYSTEM CARGO BARGE 7	TRA	1	01	01	01	02	04	01	01	01	01	078	0095
SYSTEM CARGO BARGE 8	TRA	1	01	01	01	02	04	01	01	01	01	078	0095
SYSTEM CARGO BARGE 9	TRA	1	01	01	01	02	04	01	01	01	01	078	0095
TAN TIEN	SCO	1	01	09	03	01	01	05	02	09	09	114	0490
TOGAK JIHN	HEA	1	05	07	05	06	05	04	03	05	08	180	0630
TOGAK PEKT	DRE	1	06	08	04	04	06	05	05	07	08	188	0715
TOGAK SEHD	DES	1	02	03	02	02	02	03	02	04	07	101	0265
TRASAK PLEK	TRA	1	01	02	01	02	04	02	01	01	02	080	0115
TRISTAN	SCO	1	01	04	01	01	01	01	01	05	09	098	0220
UDP ANOTEI	DES	3	02	04	01	01	01	03	01	04	06	097	0190
UDP ATHENEAN	SCO	1	02	09	05	01	02	01	05	05	09	123	0505
UDP BALIOLSOL	DRE	1	06	07	03	06	03	04	03	06	10	172	0640
UDP CAHUVEST	SCO	1	01	09	01	01	01	02	01	05	09	089	0285
UDP DABRIO	DES	1	02	04	01	01	01	03	01	04	06	097	0190
UDP DESMONA RET	HEA	1	07	06	02	04	06	03	02	07	07	168	0500
UDP EROBERUNG	DES	1	02	02	05	06	02	03	01	03	08	132	0395
UDP FARH'N	SCO	1	01	09	01	01	01	06	01	10	09	108	0455
UDP FLEEN	SCO	1	01	09	01	01	01	06	01	10	09	108	0455
UDP GOTOL	TRA	1	04	01	04	02	06	01	02	01	01	112	0260
UDP GUBRICKE	SCO	1	01	09	01	01	01	02	01	05	09	089	0285
UDP KIRIMAR	SCO	1	01	04	01	01	01	02	01	05	09	097	0225
UDP KIRWEIT	DES	1	06	05	05	06	04	04	02	06	06	160	0575
UDP LOC-NINH	DES	1	02	02	05	06	03	03	01	02	06	122	0370

Name	Class	Ft	CMP	DRV	EPS	HUL	LIF	CMS	PPS	SLD	WPN	MP	RP
UDP MATAYA SHIFS	DES	1	06	05	05	06	04	04	02	06	06	160	0575
UDP OAXACA	CRU	1	05	06	03	03	05	02	04	05	04	157	0410
UDP ORDIJI GRAPON	SCO	1	01	04	01	01	01	02	01	05	09	097	0225
UDP OV'YENBUGRUS	SCO	1	01	04	01	01	01	02	01	05	09	097	0225
UDP SROIKAN	DES	1	06	05	05	06	04	04	02	06	06	160	0575
UDP VEL'DRAN	DES	1	02	04	01	01	01	03	01	04	06	097	0190
UDP VERGA	DES	1	02	04	01	01	01	03	01	04	06	097	0190
VENTURE MARU	TRA	2	01	01	01	02	04	01	01	01	01	078	0095
VOTANN	SCO	1	01	04	01	01	01	01	01	05	09	098	0220
WIKTYN HESI	CRU	1	05	04	04	05	04	04	04	05	05	183	0485
WITNIR JEHK	HEA	1	06	07	04	05	05	05	04	06	07	196	0650
YA'KON KAHG	SCO	1	05	04	03	02	02	06	03	10	09	144	0545
YAH'WIG KESH	SCO	2	03	04	03	02	02	02	03	09	03	132	0335
YAKLAN PTOR	DRE	1	08	06	05	04	03	04	04	07	07	172	0585
YAKSUR JEHK	HEA	2	08	10	03	05	04	05	04	08	10	199	0765
YALKIM SELK	DES	3	03	03	02	03	03	03	02	05	07	124	0330
YANXI	SCO	1	01	04	01	01	01	01	01	05	09	098	0220
YAOCHEN	SCO	1	01	04	01	01	01	01	01	05	09	098	0220
YARBAS HESI	CRU	1	05	04	04	05	02	02	03	04	05	160	0385
YAWLUS PTOR	DRE	2	07	06	05	04	06	05	04	07	07	194	0675
YUWHIS PRAG	TRA	1	04	04	05	02	04	01	05	01	02	119	0380

Appendix III: The FW Fleet

Typically slow with very limited armament capability. Shielding is usually moderate.

Class: Transport
Length: 450 Meters
Beam: 173 Meters
Draught: 173 Meters

Crew Compliment: 38
Manufacturer: DuBois Autoengineering Company
Classification: Goods and Passenger Transport
Cargo Capacity: 700 units



Typically the fastest ships. Due to their small size, scouts cannot carry missiles, and have only a marginal advantage in EBW capacity over transports. Shielding is usually very light. Can carry advanced COMSEN systems.

Class: Scout
Length: 108 Meters
Beam: 39 Meters
Draught: 39 Meters

Crew Compliment: 61
Manufacturer: YopCo Astronautics Division
Classification: Research and Exploration
Cargo Capacity: none



Typically moderately fast, but highly maneuverable. Destroyers are built to carry missiles, and lots of them. They can carry moderately advanced EBW systems. They have a moderate shield capacity. COMSEN system capability is quite limited.

Class: Destroyer
Length: 170 Meters
Beam: 55 Meters
Draught: 49 Meters

Crew Compliment: 67
Manufacturer: YopCo Astronautics Division
Classification: Search and Destroy
Cargo Capacity: 60 units



Typically very fast (as fast as scouts when unburdened with cargo and supplies). Average missile capacity and advanced EBW capable. Shields are typically heavy. COMSEN capability is average.

Class: Cruiser
Length: 225 Meters
Beam: 115 Meters
Draught: 52 Meters

Crew Compliment: 91
Manufacturer: Woden
Classification: Exploration and Defense
Cargo Capacity: 80 units



Moderately fast, can carry lots of missiles and advanced EBW's. Shields are typically very heavy. Can carry moderately advanced COMSEN systems.

Class: Heavy Cruiser
Length: 250 Meters
Beam: 130 Meters
Draught: 52 Meters

Crew Compliment: 109
Manufacturer: Woden
Classification: Warship
Cargo Capacity: 130 units



Average speed, can carry lots of missiles and advanced EBW's. Shielding is typically moderate. Only dreadnoughts can carry the most advanced COMSEN systems.

Class: Dreadnought
Length: 303 Meters
Beam: 141 Meters
Draught: 81 Meters

Crew Compliment: 134
Manufacturer: Classified
Classification: Warship
Cargo Capacity: 210 units

FW Parts Lists

The following are lists of parts for the nine different systems on board the ships. Each system name is prefaced by a three letter and one letter abbreviation for the system. These abbreviations are used throughout the game.

NOTE: The following information is listed for each part in each system. Most systems have other information that will be described in each section.

RP	The number of resource points associated with the part.
DP	Damage points the system can incur. The more DP's, the stronger the part.
Soph	Sophistication level of the part.
MP	The number of mass points.
Size	The ship classes that can utilize the part. Codes are:

T	Transport	H	Heavy Cruiser
S	Scout	R	Dreadnought
D	Destroyer	A	All Classes
C	Cruiser		

CMS / M Communications/Sensor (COMSEN) System

#	Type	RP	DP	Soph	MP	Size	Inf	Base	Scan	Drone	Jam	Stealth
1	Psion WF1804	5	16	32	1	TS	45	61	21	0	0	No
2	Thuke XX	10	4	33	4	SDC	20	47	47	0	0	No
3	Giaperelli Marconi II	30	11	60	3	SDC	57	73	137	1	2	No
4	Thuke ScanMaster II	50	23	73	5	SDCH	78	62	162	0	0	No
5	Psion WF2164	80	24	94	4	HR	92	99	203	1	6	No
6	Giaperelli Bell A/32	90	31	96	4	R	94	99	192	3	9	No
7	Giaperelli Stalker MK1	120	7	99	2	S	35	42	238	0	3	Yes

Inf	Maximum tolerable interference level
Base	Base signal strength
Scan	Maximum scan radius (in millions of kilometers)
Drone	Maximum number of drones
Jam	Jamming level for enemy communications
Stealth	Stealth capability

CMP / C Computer System

#	Type	RP	DP	Soph	MP	Size	GigaOps
1	Alkis 11/3	5	2	40	6	TS	116
2	Alkis 22/3	15	6	45	7	TS	143
3	Gedvex Mica	40	8	58	3	SDC	296
4	Intellect 300	60	14	66	14	SDC	421
5	Intelligence Engine Mk 1	75	23	75	12	DCH	617
6	Intellect 500	95	17	81	15	DH	800
7	Intelligence Engine MK 2	100	14	97	16	CHR	1,045
8	Intellect 800	110	29	98	19	CHR	1,430

Gigaops Determines how much damage the computer can take and still provide operational QuadPanels

LIF / L Life Support System

#	Type	RP	DP	Soph	MP	Size	Min Func
1	Yop Company Cli-Mate 2	5	25	41	15	SD	81
2	Yop Company Cli-Mate 3	15	8	45	21	SDC	74
3	Gas Technology AF#2	40	12	62	16	CHR	63
4	Gas Technology AF#4	50	12	78	24	TDCHR	48
5	Franklin Lab Zonemaster	75	21	94	31	TCR	32
6	Franklin Lab Airmaster	80	7	98	34	TCHR	12

Min Func Minimum damage level at which the system can generate sufficient life support levels to prevent crew injury and death

SHL / S Shield System

#	Type	RP	DP	Soph	MP	Size	Energy Blockage			
							1	2	3	4
1	Hinto/KotoCo DF	5	25	57	3	TS	1	1	1	1
2	Hinto/KotoCo DF1	15	38	70	9	TSD	3	3	3	2
3	Voltac Group Gen 9	25	38	62	12	TSD	9	5	5	4
4	Deflect Tech M/20	40	48	67	14	TDCR	12	10	10	12
5	Franklin Lab Lodi	55	58	81	17	TDCHR	19	8	8	18
6	Voltac Group Gen 12A	75	29	84	16	DCHR	63	9	9	17
7	Woden Plate++	95	69	97	21	CHR	25	17	17	25
8	Woden Proteus I	110	54	98	24	H	36	21	21	32
9	Woden Proteus II	120	57	99	26	H	39	23	23	32

WPN / W *Weapons System*

#	Type	RP	DP	Soph	MP	Size	Missile Capacity										EBW	Mine	Decoy
							01	02	03	04	05	06	07	08	09				
1	Zeus Penetrator Mk1	5	10	43	11	TS	0	0	0	0	0	0	0	0	0	11	0	0	
2	Zeus Penetrator Mk2	15	9	46	14	S	0	0	0	0	0	0	0	0	0	19	2	2	
3	Sunstorm HF4	25	15	56	13	C	3	3	2	2	0	0	0	0	3	21	2	5	
4	Sunstorm HF5	45	24	67	16	C	5	5	4	4	3	0	1	0	2	32	2	18	
5	Sunstorm HF2	65	18	72	11	C	0	0	0	0	0	0	0	0	0	74	5	18	
6	Zeus Infiltrator Mk1	65	9	82	21	DCH	13	13	10	0	0	0	8	6	2	35	0	20	
7	Woden EBW	80	54	85	20	DCHR	8	0	0	0	0	0	0	0	8	64	6	0	
8	Woden EBW++	80	34	78	20	DCHR	8	8	6	6	6	4	5	0	6	36	8	23	
9	Woden Arma IX	110	45	92	25	DHR	12	12	14	8	9	9	5	2	4	44	12	15	
10	Woden Cana VI	160	6	96	34	DHR	18	17	19	13	10	15	9	9	6	56	15	15	

EBW Strength of EBW beam

Mine Mine capacity

Decoy Decoy capacity

DRV / D *Drive System*

#	Type	RP	DP	Soph	MP	Size	Max Vel	Accel	Hyper Delay
1	Rynox ATA	5	9	63	10	TS	0.24	0.021	253
2	Rynox BTB	10	5	71	9	TS	0.47	0.011	210
3	Athik Tech 100-11	25	3	72	12	D	0.53	0.031	142
4	Vromus 830/2	35	14	79	18	DCH	0.68	0.050	28
5	Vromus 830/4	45	19	80	16	SDCHR	0.74	0.068	81
6	Hinto/KotoCo 2	50	25	84	17	DCHR	0.85	0.092	75
7	Hinto/KotoCo 3	80	14	87	19	DCR	0.71	0.131	45
8	Athik Tech 100-32	90	32	89	14	SCDH	0.90	0.067	164
9	Franklin Lab Oyabe II	120	41	91	15	SD	0.89	0.101	18
10	Franklin Lab Fenaro	140	19	99	6	S	0.99	0.172	32

Max Vel Maximum velocity (in light-speed)

Accel Maximum acceleration (measured in light-speed per second per second)

Hyper Delay Delay between activation and the actual jump (in seconds)

PPS / P *Primary Power System*

#	Type	RP	DP	Soph	MP	Size	Efficiency	Blast	Primary
1	Vromus MassCon 5	5	8	71	9	TSDCH	68	2	0.1
2	Vromus MassCon 6	20	12	74	9	TSDCH	75	7	0.2
3	Doestovski Tau 3	35	10	76	13	TSCHR	82	16	0.6
4	Athik Technical LTDE	55	18	86	24	TCHR	89	22	0.7
5	Franklin Lab Sachan	95	26	97	34	CHR	97	26	1.0

Efficiency Relative efficiency of the system at providing ship's power

Blast Area of possible destruction when the system is overloaded by a self-destruct command (in millions of kilometers)

Primary Area of 100% destruction when the power system is overloaded by a self-destruct command (in millions of kilometers)

EPS / E *Emergency Power System*

#	Type	RP	DP	Soph	MP	Size	Efficiency	Replication Rate	Bulk Storage
1	Dubois Autoengineering EP1	5	29	66	3	TSDCH	82	9	120
2	Franklin Lab Burudi	20	34	71	4	TSDCH	67	18	340
3	Vromus EnergyAid 2	40	30	73	13	TSCHR	84	26	206
4	Athik Technical Assist 2	60	48	79	12	TCHR	96	39	565
5	Franklin Lab Cashir/Arida	90	34	86	16	CHR	76	51	410

Efficiency Relative efficiency of the system at providing emergency ship's power

Replication Rate Relative rate at which the system utilizes bulk matter to repair systems

Bulk Storage Bulk matter storage capacity (in units)

HUL / H *Hull System*

#	Type	RP	DP	Soph	MP	Size	Durability
1	Sealex Ergo	5	43	81	31	SD	23
2	New Caledonian B	15	56	84	35	SDH	49
3	Hinto/KotoCo Epsilon II	35	67	87	47	TDCH	56
4	Sealex Ergo II	55	65	89	35	TCHR	68
5	Aciladies HullStar	80	72	94	69	CHR	89
6	Baynux Albatross	140	99	96	43	DCHR	96

Durability Relative durability of the hull that determines resistance to damage

FW Ship List

The following list describes each of the FW ships that come with the game.

Name	Class	CMP	DRV	EPS	HUL	LIF	CMS	PPS	SLD	WPN	MP	RP
DT KYOTO MARU	TRANSPORT	02	01	01	03	04	01	02	02	01	121	0155
DT ORION STAR	TRANSPORT	02	01	01	03	04	01	02	02	01	121	0155
DT OSPREY FREGAR	TRANSPORT	02	01	01	03	04	01	02	02	01	121	0155
DT TEELIE FREGAR	TRANSPORT	02	01	01	03	04	01	02	02	01	121	0155
DT WETLAN FREGAR	TRANSPORT	02	01	01	03	04	01	02	02	01	121	0155
DT WINDWARD STAR	TRANSPORT	02	01	01	03	04	01	02	02	01	121	0155
DUBOIS TUG 2	TRANSPORT	02	01	01	03	04	01	02	02	01	121	0155
DUBOIS TUG 62	TRANSPORT	02	02	04	04	06	01	04	05	01	150	0340
EPSILON STAR	TRANSPORT	02	01	01	03	04	01	02	02	01	121	0155
FWS IKUNG SAN	DREADNOUGHT	07	07	05	06	05	05	05	07	09	209	0865
FWS AKIO MORITA	DREADNOUGHT	08	07	05	06	06	06	05	07	10	224	0940
FWS AXIA	CRUISER	07	08	03	06	04	03	03	07	08	167	0660
FWS BELLEROPHON	SCOUT	02	05	01	01	02	07	01	03	02	115	0250
FWS BOND	CRUISER	07	08	03	06	04	03	03	07	08	167	0660
FWS BRAYE	HEAVY CRUISER	06	08	01	05	04	04	04	05	06	192	0545
FWS CALAPAN	DESTROYER	06	09	02	06	04	04	02	06	10	165	0730
FWS CERNAN	SCOUT	03	05	01	01	02	02	02	03	02	113	0180
FWS CHALLENGER	CRUISER	08	08	05	06	06	04	05	07	08	206	0830
FWS CHANG JIANG	DREADNOUGHT	07	07	05	06	05	05	05	07	09	209	0865
FWS CHEONGJU	CRUISER	03	06	04	05	03	04	04	05	08	183	0510
FWS CHURINGA	DREADNOUGHT	07	07	05	06	05	05	05	05	08	200	0795
FWS CONRAD	DREADNOUGHT	07	07	05	06	05	05	05	07	09	209	0865
FWS DANTE	DESTROYER	03	06	01	03	04	02	01	04	06	142	0300
FWS DAVAO	SCOUT	03	05	01	01	02	07	02	03	02	111	0290
FWS DEMMERSON	DREADNOUGHT	07	07	04	05	04	05	04	05	08	205	0640
FWS DISCOVERY	SCOUT	03	05	01	01	02	07	02	03	02	111	0290
FWS DOLE	SCOUT	03	05	01	01	02	07	02	03	02	111	0290
FWS DONGARA	DESTROYER	06	09	02	06	04	04	02	06	10	165	0730
FWS EDINGTON	SCOUT	03	05	01	01	02	07	02	03	02	111	0290
FWS EDWARDS	HEAVY CRUISER	07	08	03	06	04	04	05	07	08	190	0740
FWS EXPLORER	SCOUT	03	05	01	01	02	07	02	03	02	111	0290
FWS FERMIN	HEAVY CRUISER	06	08	03	05	04	04	04	05	06	202	0580
FWS FREDERICK	CRUISER	07	08	03	06	04	03	03	07	08	167	0660
FWS GAPIRRI	CRUISER	03	05	03	05	03	03	03	05	08	170	0445
FWS GUARANTOR	DREADNOUGHT	07	07	05	06	05	05	05	07	09	209	0865
FWS HAILFIRE	CRUISER	05	07	03	05	04	02	01	04	06	185	0445
FWS HAWTHORNE	SCOUT	03	05	01	01	02	07	02	03	02	111	0290
FWS HENG	DESTROYER	04	03	01	01	01	02	01	02	06	118	0195
FWS HOPE	DREADNOUGHT	07	07	05	06	05	05	05	07	09	209	0865
FWS HOSA	CRUISER	07	08	03	05	04	03	03	05	08	189	0560
FWS INTREPID	HEAVY CRUISER	07	08	03	06	04	04	05	07	08	190	0740
FWS ISKIOS	SCOUT	04	10	03	02	02	07	03	03	02	130	0465
FWS JASAZAY	DESTROYER	05	06	02	03	04	03	02	05	09	158	0445
FWS JOSE RIZAL	CRUISER	03	04	03	04	03	03	03	05	06	139	0395
FWS JOUETT	DESTROYER	03	06	01	03	04	02	01	04	06	142	0300
FWS JUSTICE II	HEAVY CRUISER	07	08	05	06	06	05	05	07	09	207	0880
FWS K'UEI	DREADNOUGHT	07	05	03	04	05	05	03	07	09	174	0635
FWS KAGA	DESTROYER	03	06	01	03	04	02	01	04	06	142	0300
FWS KAJUANA	DREADNOUGHT	08	06	04	06	05	05	05	07	09	206	0815
FWS KEPLER	SCOUT	03	05	01	01	02	07	02	03	02	111	0290

Name	Class	CMP	DRV	EPS	HUL	LIF	CMS	PPS	SLD	WPN	MP	RP
FWS KELVIN ZARBOR	CRUISER	07	08	04	06	05	04	04	06	07	181	0725
FWS KOMAROV	SCOUT	03	05	01	01	02	07	02	03	02	111	0290
FWS KOZAN	DESTROYER	04	04	01	03	01	02	02	06	10	160	0405
FWS LESLIE	HEAVY CRUISER	05	05	03	04	03	04	03	08	09	159	0560
FWS LION	CRUISER	07	08	03	06	04	03	03	07	08	167	0660
FWS LION OF JUSTICE	HEAVY CRUISER	07	08	05	06	06	04	05	07	08	203	0820
FWS LION STAR	DREADNOUGHT	07	07	05	06	05	06	05	07	10	218	0925
FWS LOPEZ	HEAVY CRUISER	08	08	05	06	06	05	05	09	10	224	0965
FWS MAHABARATA	CRUISER	07	08	03	05	04	03	03	05	08	189	0560
FWS MANAHEM	HEAVY CRUISER	06	08	01	05	04	04	04	05	08	191	0560
FWS MASHONYAGGER	DREADNOUGHT	07	05	03	04	03	05	03	04	07	147	0515
FWS MERCATOR	HEAVY CRUISER	05	08	01	05	04	04	03	05	06	178	0505
FWS MOBIUS	CRUISER	08	08	05	06	06	04	05	07	08	206	0830
FWS MUKANDA	CRUISER	07	08	03	06	04	03	03	07	08	167	0660
FWS NAIROBI	DESTROYER	03	06	01	03	04	02	01	04	06	142	0300
FWS NAKURU	DESTROYER	03	04	01	02	04	02	01	03	06	129	0250
FWS NYINBA	DESTROYER	03	06	01	03	04	02	01	04	06	142	0300
FWS OKINAWA	DESTROYER	05	09	01	01	01	03	02	05	10	139	0475
FWS PAIUTE	DESTROYER	03	06	01	03	04	02	01	04	06	142	0300
FWS PAN-P'O	DESTROYER	03	06	01	03	04	02	01	04	06	142	0300
FWS PLEIADES	DESTROYER	03	06	01	03	04	02	01	04	06	142	0300
FWS PRADESH	DREADNOUGHT	07	07	05	05	05	05	04	05	09	221	0725
FWS PTEUMUS	SCOUT	02	05	02	02	02	04	02	02	02	120	0210
FWS RAPA NUI	DREADNOUGHT	07	05	03	05	04	05	04	07	10	221	0705
FWS RENIE	DREADNOUGHT	07	07	05	06	05	05	05	07	09	209	0865
FWS ROBERT CLYDE	HEAVY CRUISER	06	05	02	03	04	04	02	06	07	156	0470
FWS SEEKER	SCOUT	03	05	01	01	02	07	02	03	02	111	0290
FWS SENDLEBACK	SCOUT	03	05	01	01	02	07	02	03	02	111	0290
FWS SHEPARD	SCOUT	03	05	01	01	02	07	02	02	02	108	0280
FWS SHIVA	HEAVY CRUISER	06	05	03	04	04	05	02	09	10	176	0665
FWS SOCKDOLAGER	DREADNOUGHT	08	07	05	06	06	06	05	07	10	224	0940
FWS TAU CETI	DESTROYER	03	06	01	03	04	02	01	02	06	137	0275
FWS TENOCHTITLAN	DESTROYER	03	03	01	01	01	02	01	02	06	107	0175
FWS TERESHKOVA	SCOUT	02	05	01	01	02	07	01	02	02	112	0240
FWS TOULRYIS	SCOUT	01	05	01	01	01	03	01	01	01	097	0110
FWS UHALI	HEAVY CRUISER	05	04	01	02	03	04	01	05	06	136	0345
FWS VALKYRIE	HEAVY CRUISER	08	06	05	06	06	05	05	09	10	227	0925
FWS VALLEY FORGE	DESTROYER	03	03	01	03	01	02	01	04	07	127	0245
FWS VENGER	CRUISER	03	04	03	03	02	03	01	04	03	141	0265
FWS VETECHOR	CRUISER	03	04	01	03	02	02	01	04	03	132	0210
FWS VON BRAUN	SCOUT	03	05	01	01	02	07	02	03	02	111	0290
FWS VOSTOK	SCOUT	03	05	01	01	02	07	02	03	02	111	0290
FWS YAMAMOTO	CRUISER	07	08	03	05	04	03	03	05	08	189	0560
FWS YORKTOWN	HEAVY CRUISER	07	08	03	06	04	04	05	07	08	190	0740
FWS YURY GAGARIN	DESTROYER	03	06	01	03	04	02	01	04	06	142	0300
FWS ZEELE	SCOUT	02	05	01	01	02	07	01	02	02	112	0240
LGE TUG 17	TRANSPORT	02	01	03	04	06	01	03	03	01	136	0265
LGE TUG 18	TRANSPORT	02	01	04	04	06	01	04	03	01	146	0305
LGE TUG 20	TRANSPORT	02	01	04	04	06	01	04	04	01	148	0320
LGE TUG 41	TRANSPORT	02	01	04	04	06	01	04	04	01	148	0320

Appendix IV: Missile Specifications**Federated Worlds Armed Forces Missile Types**

#	Name	Soph	Damage	Accuracy	Accel	Range	Description
1	PN Pritchard SBR	39	n/a	78	0.040	8.00	Damages shields up to 5dp
2	Melbourne FU8	43	42	92	0.068	27.50	General damage
3	Giaperelli FU9	49	64	84	0.098	13.00	General damage
4	Franklin Lab FE	54	n/a	80	0.058	26.50	Anti-Personnel
5	Woden FE	63	n/a	86	0.190	9.50	Anti-Personnel
6	Thiodyne P/PD	78	96	71	0.164	13.00	Targets drive system
7	Woden Nova	87	122	62	0.184	12.00	General damage
8	Iliya Nova	95	148	46	0.226	5.00	General damage
9	PN Pritchard Pellet	96	n/a	58	0.141	7.60	Damages shields to 30dp

UDP / Enemy Missile Types

#	Name	Soph	Damage	Accuracy	Accel	Range	Description
1	Type 1	32	52	81	0.032	9.80	General damage
2	Type 2	48	n/a	69	0.064	19.20	Anti-Personnel
3	Type 3	51	n/a	72	0.106	25.30	Damages shields up to 5dp
4	Type 4	59	84	87	0.098	29.50	General Damage
5	Type 5	65	n/a	91	0.158	10.50	Anti-Personnel
6	Type 6	71	74	79	0.170	8.30	Targets weapon system
7	Type 7	73	84	75	0.174	15.20	Targets drive systems
8	Type 8	92	142	58	0.214	7.40	General damage
9	Type 9	97	181	67	0.242	56.50	General damage

Notes:

Accuracy is measured in percentage chance of hit

Acceleration is measured in light-speed per second per second

Ranges given are in the duration of fuel aboard (measured in seconds)

Appendix V: Importing and Transferring Data

Converting Breach 2 Squad Leaders

If you own a copy of **Breach 2**, you can convert your existing Squad Leaders into **Rules of Engagement 2** Fleet Commanders. This is accomplished in the Fleet Commander Builder. Please see the "Fleet Commander Builder" section of the Builder manual for instructions.

NOTE: **Breach 2** Squad Leaders are stored in files with the file extension .B2L; i.e. - NAME.B2L.

Transferring Builder Items

All of the builder elements (Fleet Commanders, Captains, Enemies, Ships, Solar Systems, and Campaigns) are stored in separate data files. With the exception of campaigns, all items of a single type are combined into one data file. These data files are stored in the DATA directory under the following names:

RULES2.CMD	Fleet Commanders
RULES2.CAP	Ship Captains
RULES2.EMY	Enemy Races
RULES2.FLT	FW Ships
RULES2.ENS	Enemy Ships
RULES2.SOL	Solar Systems

Campaigns are stored in separate files in the CAMPAIGN directory with the file extension .CMP

Rules of Engagement provides a way you can add builder items from a friend's game, or items you download from a modem. Upon running the game, the program will look for files named XFER2.CMD, XFER2.CAP, XFER2.EMY, XFER2.FLT, XFER2.ENS, and XFER2.SOL. If it finds one or more of these files, it will merge the contents of the file with the main data file of the same type (i.e. - merging XFER2.CAP with the current RULES2.CAP). The "XFER2" file will then be deleted.

For instance, suppose you want to give a copy of your enemy races file to a friend of yours who also owns a copy of the game. Make a copy of your RULES2.EMY file, renaming it XFER2.EMY. Send the file to him and have him copy it into his DATA directory. When he runs the program, your enemy races will be merged with his.

Data files may also be imported from **Rules of Engagement**. The procedure is the same as that for transferring **Rules of Engagement 2** items, except that the file names should begin with "XFER" as opposed to "XFER2". Note that since **Rules of Engagement** did not have a separate data file for enemy ships, that item cannot be transferred.

Note that duplicate entries in any of the data files will result if both the "RULES2" and "XFER2" files contain the same item. This will not cause any problem with the game, but you may want to delete such duplicate entries.

CAUTION! Just because two items have the same does *not* mean they are identical. Examine each item before deleting it. Two alien races are both called Martians and two ships are both named Shalmanseer could actually be quite dissimilar. In other cases, the items are virtually identical, but one has been edited slightly. In such cases, we recommend editing one of the duplicate items to change its name, simply to avoid confusion. In cases where there items are exact duplicates, it's best to delete one of them.

Since campaigns are stored in separate files, you do not need to follow this procedure to transfer campaigns. Simply copy the new .CMP files into the CAMPAIGN directory.

Appendix VI: Campaign Descriptions

The following are introductions to each of the four campaigns that come with the game. Although the campaigns may be played in any order, they are listed in the suggested playing order.

Two of the missions, Domsday Operation and Ill Wind are password protected. You will not be able to load these campaigns into the campaign builder until you have been given the password upon successful completion of the campaign.

Each campaign description provides an indication of how many IGS links are included. These links **Breach 2** exclusively.

Basree Cargo

by Haywood Nichols

Difficulty Rating: Very Easy

IGS Links: None

This is a simple campaign to be used for learning the game. PART I: A SHAKEDOWN CRUISE in the TRAINING MANUAL will take you through the first mission of this campaign.

Basree runners have been reported to be smuggling large quantities of the drug "mylar" into UDP and FW systems in the Local Group. Your task is to intercept and destroy one of these shipments. If successful, the FWAF may be able to determine their base of operation for further action.

Domsday Operation

by Hosea Battles

Difficulty Rating: Medium

IGS Links: One

Operation Domsday begins with an attack on the Hyperspace Booster by an alien race called Xenos Agnos. This has sparked a renewed campaign by the FWAF to protect its interests against this foe. Once again, the Xenos Agnos have allied themselves with the UDP. The FW now find themselves waging a battle on two fronts.

Tour of Duty

by Jose Lopez

Difficulty Rating: Medium

IGS Links: Many

As a cadet graduating from the Federated Worlds academy, you are assigned to patrol a sector. The events in this campaign can be assumed to have happened over a period of a couple of years with the degree of success earning you greater responsibility within the assigned sector.

Your first duty will be to escort the local commerce as it traverses the trade-lanes. The enemy is composed of pirates who rely only on old transports as raider vessels. A scout or an old destroyer should be enough to get the job done. Caution is the rule, as a lucky missile can cripple your drive, blind your sensors, or destroy your weapons. The hardest nut to crack in the first mission will be the enemy outpost. Fortified and well armed, careful manual maneuvering and prolonged fire will eventually bring down its shields. Failure to complete this mission will surely mean a transfer to Fleet Logistics hauling supplies.

After a successful completion of the escort mission, you will be given more freedom of action. Throughout your tour you will be asked to take your vessel to places no ship was meant to visit. "Terrain" so fierce your sensors will be blinded and lowering shields means sure death to your crew. Add to that a cold and unforgiving adversary which must be met, and the missions spell disaster.

Ill Wind

by Hosea Battles

Difficulty Rating: Hard

IGS Links: Several

During "Operation Doomsday," several unknown ships had probed both the Icharr system and the Hyperspace Booster. FW ships that were sent to follow and investigate these ships were attacked. This unknown enemy launched attacks on both the FW and UDP simultaneously.

An intelligence code, translated 'Ill Wind', kept appearing in captured enemy data. Word also came back of horrors inflicted on FW prisoners at the hands of their captors. This, combined with repeated incursions into Local Group space, has led to a renewed effort by both the FW and UDP to defeat this foe. It may take the combined might of both powers to finally stem the tide of this new threat.

Appendix VII: Interlocking Game System™

Overview

The Interlocking Game System™ (herein referred to as IGS) is an innovative new approach to computer gaming. IGS Games are capable of working with one another, appearing to the player to be a single game.

Rules of Engagement 2 is an IGS controlling module. It is, in effect, the starting point for your characters. **Rules of Engagement 2** will automatically load and run other IGS games when the game conditions warrant.

Requirements

The only special requirement to run the IGS system is a hard drive. Unfortunately, running such a complex and intertwined system as IGS just does not work smoothly on a floppy based system.

Breach 2

As of this writing, the **Breach 2** is the other game in the IGS series (**Breach 3** is at present under development). You will need **Breach 2** version 2.0 or higher (the version number is shown on the title screen of the game). After installing **Rules of Engagement 2**, you should copy all of the files from your **Breach 2** installation into your **Rules of Engagement 2** directory.

Some **Rules of Engagement 2** campaigns contain "IGS Links", meaning that there is at least one enemy ship or outpost in a mission within the campaign that is linked to a **Breach 2** scenario. When attempting to board the ship or outpost, the game will bypass the normal boarding screen and instead, load **Breach 2** and the scenario. No additional interaction is required on your part! Your Fleet Commander will act as the Squad Leader for the mission. All experience gained in the mission is transferred back to **Rules of Engagement 2** and saved in your Fleet Commander's record.

The scenario can be saved in progress if you desire. Once you resume the mission, **Rules of Engagement 2** will automatically reload **Breach 2** and resume the scenario. When the scenario is complete, you will return to **Rules of Engagement 2** right where you left off.

Other IGS Modules

Please consult your dealer for information on additional IGS modules.

Appendix VIII: Game Configuration

Overview

The game configuration panel, accessible from the main screen, allows you to alter some of the game settings. The screen is divided up into eight sections.

For keyboard users, each of the eight sections may be accessed by pressing the letter associated with that section. For example, pressing B will highlight the "B" button in the Mouse section. After selecting a section, the keyboard equivalents may be used to trigger each button in that section.

Once settings have been made, pressing ESC to leave the panel will save the setting to the disk for future use. If you should change your sound board configuration in the R2SETUP program (IBM only), the settings made on this panel will be reset to their default configuration.

Skill Level (A)

This section allows you to set the skill level at which the missions will be played. The three skill levels (Recruit, Normal, and Veteran) are covered in PART II: OVERVIEW.

Mouse Pointer (B)

This section allows you to turn the mouse pointer on and off. If you have a mouse driver installed and do not wish to use the mouse interface, you may do so by selecting the OFF button.

When playing the IBM version, you must have a mouse driver installed in order to use the mouse. Selecting ON will not display a mouse pointer unless you have a driver properly installed prior to running the game.

Sound Effects (C)

This section allows you to turn the sound effects on and off. It does not affect the digitized voice or music.

In addition, some sound boards provide the ability to alter the sound volume. You may use the volume scale to set the volume level. The left end of the scale is minimum volume, while the right side of the scale is maximum volume. Keyboard users may use the left and right arrow keys to adjust this scale.

Auto Time Decrement (D)

This section allows you to set the "auto time decrement" parameter. This affects play at the Normal and Veteran modes. If there are no enemy ships within your sensor range, and an enemy ship appears, the time multiplier will automatically be reduced to this value. If the time multiplier was already below this value, it will not be changed.

IGS (E)

This section allows you to turn the IGS link on and off. If the link is set to "on", **Breach 2** or **Breach 3** will be used for boarding any ships or outposts that have an IGS link. Setting this option to "off" will use the normal boarding routine for *all* boardings.

Animation (F)

This section allows you to turn the animation on and off. This affects all animated sequences in the game.

Music (G)

This section allows you to turn the music on and off. It does not affect the sound effects or digitized voice.

In addition, some sound boards provide the ability to alter the music volume. You may use the volume scale to set the volume level. The left end of the scale is minimum volume, while the right side of the scale is maximum volume. Keyboard users may use the left and right arrow keys to adjust this scale.

CCSI Vocals (A.N.D.I.) (H)

This section allows you to turn the digitized voice on and off. It does not affect the sound effects or music.

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